A STUDY OF THE ECONOMY OF A RICE GROWING VILLAGE IN CENTRAL THAILAND

A Thesis
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Doctor of Philosophy

By
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[Title Page]
[p. i]

BIOGRAPHICAL SKETCH

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In 1940, he entered Thai government service and served as Head Section of Rice Extension from 1941 to 1946. Throughout World War II, he also served as Food Drive Officer for Bangkok, Thonburi, Nonburi, Ayuthia, Chainat and Supanburi. Concurrently, he was also a member in the Occupation Sub-Committee of the Board of Evacuati[illegible]

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He entered Cornell University in 1950, and received a Master of Science degree in 1951. During 1952-53, he was sent by the Southeast Asian Program of Cornell University to continue his research in Bangchan, Thailand. He completed the requirements for the degree of Doctor of Philosophy in September, 1955 with a major in Economics of Agriculture, and minors in Cultural Anthropology and Far Eastern Studies.

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To

000 My teacher and friend
Lauriston Sharp

CONTENTS

Page

000 INTRODUCTION

I. PURPOSE OF THE STUDY 1

- The Dominance of Rice in the Economy of Thailand. 1
- Lack of Attention to the Village Economy. 4
- Purpose of the Study. 10

II. SOUTHEAST ASIAN SETTING OF AGRARIAN PROBLEMS OF THAILAND 11

- Basic Historical Background 11
- Southeast Asia and World History 14
- Colonization, Old and New 15
- Impact of the Changing Trend of Trade with the West 18
- Characteristics of Current Southeast Asian Economy 20
- Cultural Background of Thai Peasants . . 29
- Commercializationof Rice Growing 31

CHAPTER

PART I

THE COMMUNITY AND COMMUNITY ECONOMY

I. METHODOLOGY. 35

- Reasons for the Choice of the Field Site. 36
- Techniques for Establishing Rapport . . . 38
- Techniques for Gathering Information . . 41
- Evaluation of Data. 43

II. THE COMMUNITY. 45

- Geography 45
- Vegetation. 47
- Livestock 48
- Fish 50
- Place of Bangchan in the Administrative Area. 52

Page

000 CHAPTER

Our "Natural" Bangchan Village. 52
History of Settlement 54
Population. 56
The Family. 60
Disappearance of Some Families from Bangchan 66
Appearance of New Families in Bangchan . 76
Pattern of Establishment of New Families. 80
Economic Significance of the Family . . . 91

III. COMMUNITY ECONOMY 94

Occupational Structure in Bangchan . . . 94
Land Utilization 111
Rice Production 119
Other Food Production 125
Land Tenure 129
Rent of Rice Land 140
Prices of Land 156

PART II

BUSINESS AND LIVING ASPECTS OF THE FARM

IV. FARMING POPULATION 170

Sampling Technique 172
Effect of Time Element on the Size of the Sample. 177
Composition of Farm Operating Families. . 180
Training for Farm Work 185
Remunerations for Farm Work 191
Changes in Farming Population in Bangchan 206

V. FARM TECHNOLOGY 212

Types of Rice Cultivation 212
Farm Equipment. 214
Draft Animal 223
Steps in Rice Production 225
Labor Requirement in Rice Production . . . 240
The Critical Period in Rice Production. . 246
Labor Adjustment Devices. 252
Cooperative Work 254

VI. FARM ORGANIZATION AND MANAGEMENT 271

Limited Role of Bangchan Operators. . . . 271
Elements of Agricultural Production . . . 277

Page

000 CHAPTER

VII. ECONOMIC CONDITION OF FARM OPERATORS. 293
Degree of Self-sufficiency. 294
The Operator's Remuneration and Measures of Success. 296
Factors Affecting Farm Profit 309
Ordinary Household Expenses 315
Special Expenses. 327
Special Receipts. 331
Net Accumulation of Assets. 334
Debt Situation. 340
Cash Situation and Role of Paddy. 356

PART III

ECONOMIC PROBLEMS OF BANGCHAN

VIII. SALIENT FEATURES OF ECONOMIC PROBLEMS OF BANGCHAN 368
Low Incomes 368
Inherent Excess of Expenses over Incomes. 372
Population Pressure 373
Lack of Effective Control and Regulation of Water Supply 377
Problems in the Marketing of Rice 380
Scarcity of Cash and Credit 387

IX. CONCLUSIONS 391

APPENDIX

A. TERMS USED IN THIS STUDY 393
B. SCHEDULES USED IN THIS STUDY 395
C. REGISTERED RICE MILLS IN THAILAND 411
D. LIST OF FRUIT GROWN IN BANGCHAN 413
E. LIST OF VEGETABLES GROWN IN BANGCHAN 414
F. LIST OF FISH AVAILABLE IN BANGCHAN 415

BIBLIOGRAPHY. 416

TABLES

Page

000 1. Population of Bangchan in 1949 and 1953 57

2. Distribution of Population by Age and Sex, 1953 58

3. Distribution of Types of Family, 1953 62

4. Distribution of Family Size, 1953 65

5. Changes in Bangchan Families from 1949 to 1953. 67

6. Disintegration and Annexation of Families, 1949-53. 74

7. Frequency Distribution of Length of Nascent Period, 1953. 84

8. Parental Gifts to 63 Newly Established Families, 1909-48 90

9. Occupational Distribution by Family, 1949 . . . 95

10. Occupational Distribution by Family, 1953 . . . 96

11. Changes in Occupational Structure, 1949-53. . . 97

12. Land Available for Rice Production, 1953. . . . 112

13. Rice Land Worked by Bangchan Residents. 114

14. Village Rice Acreage, Crop, Average Yield, and Crop Index by Year, 1948-52 120

15. Village Paddy Consumption, 1953 121

16. Estimated Village Paddy Surplus, 1953 124

17. Estimated Village Production and Surpluses of Secondary Farm Products, 1953 128

18. Rice Areas Worked, Owned, Rented In, and Rented Out, 1953 130

19. Distribution of 216 Farms According to Land Tenure, by Conventional Classification, 1953. 132

Page

000

20. Distribution of 216 Farms According to Land Tenure, by Suggested Method of Classification 1953. 133
21. Frequency Distribution of Land Owned by Operators, by Size Class, 1953 137
22. Frequency Distribution of Land Owned by Non-oper[illegible]s, by Occupational Group, 1953. . . . 138
23. Net Areas Rented Out by Various Occupational Groups, 1953. 139
24. Different Rental Methods, 1948. 141
25. Different Rental Methods, 1952. 142
26. Relative Sensitivity to Chage in Rent Rates of Landlord-operators and Other Groups 147
27. Prices of Rice Land Actually Sold or Purchased. 158
28. Estimated Prices of Bangchan Land by Zone Shwoing Price Changes from 1948 to 1953 159
29. Representation of 104 Selected Farms in the Total Farm Population, by Hamlet, 1948. . . . 176
30. Changes in Occupation of 104 Selected Operators, 1948-53 179
31. Composition of Farm Operating Families,1948 and 1952... 181
32. Distribution of Family Size of 106 Farm Operating Families, 1952. 186
33. Annual Wages of Hired Laborers in Bangchan and Its Neighborhood, 1949-53 195
34. Work Records of 34 Selected Farm Laborers in Bangchan and Its Immediate Neighborhood, 1949-53. 202
35. Summary of Year Round Work by Chom Farm Staffs 1953. 244
36. Summary of Year Round Work by Buffaloes on Chom Farm, 1953 245
37. Daily Labor Spent by Chom Farm Staffs, 1953 . . 264
38. Cost of Producing Paddy on 104 Sample-farms, 1948 279

Page

000

39. Fragmentation of Working Area of 104 Sample-farms, 1948 281

40. Frequency Distribution of Areas Worked by 96 Operators, 1948-52 283

41. Changes in Areas Worked by 96 Operators, 1948-52 284

42. Distribution of Full-time Labor Force of 104 Farms, 1948 285

43. Frequency Distributionof Adjusted Areas Worked Per Man of 104 Farms, 1948. 287

44. Frequency Distribution of the Value Per Farm of Equipment and Materials of 104 Farms, 1948 289

45. Frequency Distribution of the Value Per Rai of Equipment and Materials of 104 Farms, 1948. . 290

46. Frequency Distribution of Degree of Self-sufficiency of 106 Sample-farms, 1952 295

47. Frequency Distribution of Labor Income of 104 Sample-farms, 1948. 302

48. Frequency Distribution of Labor Earnings of 104 Sample-farms, 1948. 305

49. Frequency Distribution of Cost of Producing One Tang of Paddy of 104 Sample-farms, 1948 . . . 307

50. Frequency Distribution of Cost of Producing One Rai of Paddy of 104 Sample-farms, 1948. . . . 308

51. Frequency Distribution of Returns Over Cost of Producing Paddy of 104 Sample-farms, 1948 . . 310

52. Breakdowns of Cost of Producing Rice on 104 Sample-farms, 1948. 312

53. Average Annual Ordinary Expenses of 106 Sample-families, 1952. 316

54. Frequency Distribution of Annual Ordinary Expenses of 106 Sample-families, 1952 317

55. Distribution of Family by Consuming Units, 1952 322

56. Variability of Various Items of Expenses of 15 Sample-families, 1952 324

Page

000 57. Special Expenses of 96 Sample-families During March, 1948 - February, 1953. 330

58. Special Receipts of 96 Sample-families During March, 1948 - February, 1953 332

59. Frequency Distribution of Net Accumulation of Assets by 96 Sample-families, March, 1948 - February, 1953. 339

60. Classification of 96 Sample-operators According to Outstanding Debts As Of December, 1953 . . 345

61. Frequency Distribution of Credit Purchases of 96 Sample-operators, December, 1953 347

62. Frequency Distribution of Long-term Loans of 96 Sample-operators, December, 1953. 348

63. Classification of Credit Purchases According to Rate of Interest Charged, December, 1953 . 351

64. Classification of Long-term Loans According to Rate of Interest Charged, December, 1953. . . 354

65. Frequency Distribution of Indices of Capital Formation Potential of 96 Sample-operators, March,31, 1953 359

CHARTS

Page

000 I. Seasonal Variation of Man Labor Spent by Chom Farm Staffs and of Man Labor Spent on Chom Farm, 1953 262

II. Seasonal Variation of Buffalo Labor Spent on Chom Farm, 1953 263

MAPS

I. Sketch Map of Tambol Khana Yao, Amphoe Bangkapi, and Tambol Bangchan, Amphoe Minburi. 162

II. Sketch Map of Chom Farm and Homelot, Banchan . 242

INTRODUCTION

I. PURPOSE OF THE STUDY

The Dominance of Rice in the Economy of Thailand

*243 433 In Thailand, rice holds such a dominant position that the whole economy of the country may almost be described as a rice economy. According to the 1947 census, 84 per cent of the working population were directly engaged in production of rice which occupied more than 90 per cent of cropped land. The dominance of rice in the Thai economy was attributed by Pendleton to the following factors: 121 (1) Much of the best land in Thailand is flooded during the rainy season, and no other crop can be grown without special and expensive alteration of land; (2) Rice is the most wonderful food crop for man in the tropics, for even without fertilizers it will grow and produce at least a reasonable amount of food on soils too low in fertility for other food crops; and (3) Thailand has abundant cheap labor skilled in growing diverse varieties of rice with a fair degree of efficiency.[1]

121 262 433 Another factor may be added to Pendleton's list -- wet rice, which has for long been the staple product of the country, combines with locally produced fish, fruit and some vegetables for an adequate diet of the populace.

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[1] Robert L. Pendleton, "The Agriculture of Siam," Foreign Agriculture, Volume 10, No. 11 (November 1946), pp. 156-57.

121
56 Furthermore, in his study of Chinese community
433 leadership in Bangkok, Skinner observes that most aspects
[181] of Thai culture and society militated against the masses'
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175 taking up non-agricultural pursuits. In Skinner's words:[2]
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433

> In the early 19th century, the basic division in Thai society was that between the elite and the masses. The king and the royal aristocracy together with the bureaucratic nobility wielded full economic and political power. Beneath these strata were the masses, the great majority of whom were either freemen or slaves. Within this hierarchic system, each individual had a fixed (though not unchangeable) status with clear-cut responsibilities and rights toward individuals above and below him. Every freeman was in theory the client or retainer of a person in the elite strata, while every slave was the property of an individual in the upper strata.
>
> The great majority of the freemen were agriculturalists, but not serfs; they were attached not to the land but to the patron, and in certain circumstances could transfer patrons. The client-patron relationship was paternalistic and interdependent; the freeman got security and care in return for his customary services. Freemen, however, as well as slaves, were not permitted to flee or leave the purview of their patrons and owners. [653] In addition, all male freemen within certain age limits and many classes of slaves were liable to public service in the king's name for four months of each year -- this obligation being the basis of the corvee system. Public work of all kinds -- temples, canals, fortifications -- were built by corvee labor, while the army was manned by conscripts and slaves. Patrons were responsible, when requested, for supplying a certain number of their clients in a corvee capacity to specified government department.

[641] This description, though brief and somewhat oversimplified, suffices to show that the institutionalized status of the Thai masses precluded the personal freedom and geographical mobility necessary for

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[2] G. William Skinner, A Study of Chinese Community Leadership in Bangkok, together with an Historical Survey of Chinese Society in Thailand" (unpublished doctoral thesis, Cornell University, Ithaca, New York, 1954), pp. 117-18.

> 121
> 175 competition in new economic ventures. Moreover, the
> system discouraged even the further development of
> 433 Thai craftmanship and skills. Talent was rewarded
> 56 by forced service in the patron's household, under
> disadvantageous economic and social conditions. Agriculturalists had fewer obligations and a less coerced life than artisans, who when especially skilled, could be forced into royal service for life. Under these circumstances, Thai initiative and creativity were stifled.

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175 To complete the pict[illegible], a last factor contributing
178 to the dominance of rice in Thai economy should be included.
433 The revolutionary changes in Thai society and economy during
56 the reigns of Mongkut and Chulalongkorn served only to
strengthen the occupational patterns already set. Corvee
was gradually weakened during the second half of the 19th
century through cash exemption and state employment of wage
labor, and the system was officially abolished in 1899.
Chulalongkorn brought slavery to an end by process begun
in 1874 and finished in 1905. The patronage system, too,
was dealt a severe blow in the governmental reforms and
[439] reorganization of 1891-92. Coincidental to the gradual
gaining of freedom of the Thai masses during these decades
was the growing demand for Thai rice, initiated by the free
trade opportunity offered by the Bowring Treaty in 1854
and stimulated by the opening of the Suez Canal in 1869.
The tremendous expansion in rice cultivation which occurred
during the second half of the century absorbed almost
entirely the increase in Thai population as well as the
Thai labor and energy freed by the abolition of the old
semi-feudal system. The Thai, then, had no inclination

124 175 178 433 56 to seek a life divorced from villages and rice cultivation; the wealth of unused land which was theirs for the clearing coupled with the world demand for rice meant that they also had no necessity to consider any shift from the traditional livelihood. Thus the net result of the social reform and economic expansion during the reigns of Mongkut and Chulalongkorn was to confirm the Thai masses in their preference for rice cultivation.[3]

Lack of Attention to the Village Economy

*243 433 654 In spite of the growing dominance of rice in the economy of Thailand and the consequent increasing government responsibility in the success or failure of the crop, the nature of the operations of the rice economy in the village has been given surprisingly little attention. The result has been: (1) ignorance of the most simple facts about rural conditions resulting in wrong or doubtful popular concepts; and (2) ready popular acceptance of biased concepts promulgated by various interest groups.

829 Among the young intellectuals educated in Bangkok or abroad, civil service officials stationed in Bangkok, and the aristocrats, all of whom have no direct contact with village life, there seems to exist a stereotyped picture of the rice farmer. Only lip service is paid to his importance. He is thought of as an uneducated citizen, often cheated by the Chinese rice dealers. He is a man behind the plow

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[3] Ibid., p. 120.

829 far removed from what is going on in the civilized world.
Most of the time he appears barefooted in soiled clothes.
[291] He is rather content, wanting only enough food for his
[301] family and perhaps a few gold necklaces to adorn his wife
and their daughters. He grows the best quality rice the
world has known in the most fertile soil, and should be
rich if only he does not gamble and drink too heavily. With
"rice in his field and fish in his pond" he has the simplest
[342] life and no problems. Although he is located in an open
[356] country with fresh air, his living quarter is rather unhealthy -- a thatched shack with dirt floor where buffalo
manure is scattered around. His farm work is simple, consisting only of sowing seeds, plowing, harrowing, harvesting,
and threshing. He has one or two water buffaloes to help
[407] in the preparation of land and threshing. Farm implements
[412] are crude and simple, consisting of plows, harrows, sickles,
[52] and a noria (a kind of water-lifting device). The farmer
works hard during the short work season, devoting the greater
part of the year to such activities as drinking, cock fighting,
fish fighting, playing cards and various kinds of gambling.
Since he works little and spends much, he is always in debt.
If he is one among the few good farmers who work more and
do not indulge in wasteful pastimes, he usually has a surplus income which he hoards. He is too stupid to take advantage of savings-bank facilities which the government has
made available to farmers in every district.

829 369 Among the city people who have some contact with village life, the picture varies depending upon individual experience but is often exaggerated. Generally speaking, contacts are of two types -- through landlord-tenant relationships, and through short visits, usually during the dry non-working season when festivals abound. In either case, the picture of the farmer and his village life is distorted.

There are of course many who are really familiar with rural conditions. These are the farmers themselves and the people who have been living in a village or in a [641] market town for a long time. Unfortunately very few of these have occasion to become the effective spokesman for rice [647] farmers. If they ever enter the government service, they usually become only low grade officials whose voice is rarely heard.

129 433 It has been observed that distorted pictures of rural conditions have frequently been reduced into wrong or doubtful popular concepts which often lead to the adoption of policies harmful to the rice economy in general and the rice farmer in particular. To cite a few examples, during the business recession in 1952, rice farmers were accused of having hoarded cash thus creating a scarcity of 829 money in the cities.[4] It is also generally held that farmers are poor because they have been and are being cheated by the Chinese rice dealers, and that once the problem of the

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4. Editorial in Prachatipatai (Le Democrate), 1952.

829 Chinese middlemen is solved the farmer's problems will be all over. Another sweeping generalization is that farm poverty is due to the fact that farmers are lazy and indulge in gambling and drinking and thus waste a good six months or more in expensive pastimes. To remedy the situation, it has been suggested that farmers must be induced to work more, preferably by close and tight supervision since they are stupid as well as stubborn![5]

829 433 The second type of negligence involved the acceptance of biased concepts proposed by various groups whose interest is diametrically opposed to that of rice farmers. A higher price for rice, it is often propounded, will not benefit rice farmers because the increment will all go to the rice dealers; hence, a raise in price is nothing but a help to the Chinese middlemen.[6] [435] It is also often held that rice growing is profitable and the rice farmers are now quite prosperous as rice prices have gone up more than twenty times since the war; and as for those farmers who are apparently poor, it is actually their own fault due to self indulgence.[7] Small movable rice mills are held to be damaging to the farmers because they have created a large number of middlemen who in turn combine and put pressure on the farmers in the

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[5] See my paper, "Thai Rice Farmer and His Economic Problems" (paper read at the Siam Society, Bangkok, May 17, 1949).

[6] *Prachatipatai*, *op. cit.*

[7] *Ibid.*

829 form of price fixing.[8]

433 These popular concepts are both illusive and illogical, and we shall have occasion to discuss them in the later chapters. For the moment, let us consider the consequences of the lack of knowledge about the real situation in the village and the prevalence of doubtful as well as biased concepts of the village rice economy.

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[503] The commercialized rice growing area of Thailand is located in the Central Plain, which is roughly trianguler in shape with each side about 150 miles in length and is crisscrossed by canals for irrigation and communication. It is in this area that the government rice promotion program has been concentrated. In 1938 a rice man, an equivalent of the American county agent, was assigned to each of the 91 rice producing townships in the area to carry out the program of bolstering rice production through advocacy of improved varieties and through rendering technical advice and direct help in water adjustment. In 1954, a new Rice Department was created to deal specifically with problems in rice production, and the supervised area was extended to cover the entire country. In order to perform their duty efficiently, the rice men need not only the technical knowledge in the agronomic aspect of rice production but also the general background information on village economy.

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185 Again, not only is such information necessary for the ordinary functioning of the supervision and extension

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[8] Ibid.

654 work of the Ministry of Agriculture, it is also indispens-
433 able to the formulation of an integrated national policy.
185 Even as late as 1953, M. L. Dej Snidwongse, the former Governor of the Bank of Thailand, remarked that Thailand was not ready for an overall economic plan because reliable data were still lacking.[9]

659 Thailand's shortage of economic data is currently
648 a major obstacle to the potential economic aid she might
433 receive from abroad. Although various international assistance agencies are being stationed in Bangkok, with limited background information, experts of these agencies are willing to endorse only conservative recommendations. It is a pity that these experts should waste much time and effort in securing simple information which should be made available to them at the outset. Hence, the much needed tangible aids are slow to materialize.

656 Still, the damage brought about by the shortage of
435 information is not as grave as that incurred by doubtful
433 and biased concepts previously mentioned. Much can be said
656 about the postwar control of the price of rice. Suppression
256 of the small movable rice mills is also an unnecessary step.
433 If large rice mills are desired for other purposes and cannot in one way or another compete successfully with small rice mills in spite of their apparent advantage in scale of business, it would seem that the interest of the farmer might be

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[9] In an address delivered at the Economist Lunch Club, Bangkok, 1953.

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433 better preserved by direct government subsidy to the former rather than suppression of the latter.

Purpose of the Study

121 The primary purpose of this study is not to recommend an elaborate agricultural policy for Thailand, nor to influence its present course, but to lay ground work for further researches necessary for effective formulation of a realistic policy. More specifically, it is intended to locate agrarian problems and pose meaningful questions for subsequent studies on a national scale. Wherever possible, it also seeks to dig out details which are usually not uncovered by the more extensive studies of a survey type.

II. SOUTHEAST ASIAN SETTING OF AGRARIAN PROBLEMS OF THAILAND

Some writers suggest that Western economic theory is not valid for the East because of differences in setting. This point should not be over-emphasized; for good theory takes into account exceptions to the rule, which some people interpret as disproving the generalization. It is important to note, however, that economic principles are generally based on certain assumptions and that there are several instances when assumptions taken for granted in the West do not apply in the East. To avoid the danger of over-simplification and to be alert to the consequent pitfalls, it is perhaps worthwhile at this juncture to digress into the Southeast Asian setting before occupying ourselves with the economic operations in a single rice producing village of Thailand.

Basic Historical Background

The heart and civilization of the West are its cities and towns. According to Zinkin, it is the nature of these cities and towns and their effect on Western society which historically differentiate Europe from Asia.[1]

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[1] Maurice Zinkin, *Asia and the West* (London and Aylesbury: Hunt, Barnard & Co., Ltd., 1953), p. 11.

The same author maintains that Asian cities were rarely long-lived and that their economic basis was not commerce. Asia has known no City-State nor Corporations, hence there was no growth of diverse loyalties as in Europe. No associations of citizens had arisen; for there were no citizens, there were only subjects and monarchs. The true Eastern city has always been a collection of civil servants, soldiers, and artisans, all dependent upon the whims of power. The cities in Asia could provide no focus of resistance to arbitrary power, and the capacity to resist has resided in the village only. Asian villages, on the other hand, are very old, and if need be, could function without any external authority.[2]

In the West, what gave the cities their importance was their economic life, not their political position. Relatively speaking, European peasantry played a minor role in the economy of the country. On the other hand, cities in the East grew rich because their lords were powerful. The preference of Asian merchants for gold and silver, which they could hoard, over productive investment was the natural reaction to the knowledge that any apparent possession of wealth would bring in a tax-collector. The lack of security for capital in Asia helps explain the technical backwardness of the area.[3]

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2. Ibid., p. 13.
3. Ibid., pp. 15-16.

Until the most recent time, real opportunity did not exist in Asia. Government was carried on by appointees of the monarch. In China they were scholars, in Japan soldiers, in India and Southeast Asia they were the local nobilities. Nowhere were they merchants.

The Western village was constantly drawn into a wider economy, and the countryman was brought in touch with the larger world. In Asia he was not. While the Western peasant was ready to migrate to the cities or emigrate overseas and could adapt himself to the changing modes of life brought in by the Industrial Revolution, his Asian counterpart could conceive no other way of life than agriculture.

Finally, the growth of the middle class was a purely European phenomenon. It was the peculiar conditions of urban life that had shaped the type of mind of the middle class people. In the countryside, there were usually only two classes -- the landed and the landless. On the other hand, there was room for an infinite gradation in the city. It was this play of levels which had given the Western city dweller, and through him all members of Western society, his flexibility and curiosity of mind, his admiration for skill and appreciation of success, the weight he gave to tradition, and the readiness with which he innovated. This urban class and these urban traits and urban professions had been lacking in Asia.[4]

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[4] Ibid., p. 18.

Southeast Asia and World History

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175 At the present time the whole of Southeast Asia is obviously and dangerously entangled in world history. Often it is suggested that this is quite a new thing. Actually, there is nothing new in the entanglement of Southeast Asia in world history. After pointing out that the Southeast Asian states derived their civilization from India but fell within the political orbit of China, Professor Coedes summarizes the consequences:

> Most of these states have reacted to the great shocks that have disturbed the Indian peninsular and the Middle Kingdom. The conquests of Samudragupta in the Ganges Valley and South India in the 4th century and the expansionist policy of Chola emperors of Tanjore in the 11th century have had their repercussions on the other side of the Bay of Bengal. Even more markedly has the history of Further India been influenced by affairs in China. The Chinese have never looked favorably on the growth of strong powers in the southern seas, and it deserves notice that Funan, Cambodia, and the Javanese and Sumatran realms reached the zenith of their prosperity during just those epochs when the great dynasties of China were enfeebled. Also these countries are mutually linked together by numerous ties, geographic and economic, and every revolution in any one of them, by disturbing the whole region, has had repercussions on the others.[5]

Similarly, Krom suggests links between the course of events in India and the spread of Indian settlements over Southeast Asia.[6]

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439 In a talk on the Tropical Far East and world history at the Siam Society, Bangkok, Furnivall pointed to economic

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[5] J. S. Furnivall, "The Tropical Far East and World History," Journal of the Siam Society, Volume 39, Part 2 (January 1952), pp. 120-21.

[6] Ibid., p. 121.

648 439 geography for an explanation of the relations between Southeast Asia and the outer world. The history of the China trade and the spice trade, Furnivall indicated, had revealed that Southeast Asia was of minor importance in each trade route, but it was significant as a byway along both routes, and it was sensitive accordingly to convulsions affecting the course of trade along either route. In Furnivall's words:

> 175 439 487 648 For China there have always been two main lines of communication with the West: the land route across central Asia, and the sea route round the coast. Throughout the ages traders have followed whichever route seemed easier. Both routes, however, are liable to interruption. The land route is exposed to wild hordes in central Asia and to the results of political catastrophes in the Middle and Near East. The sea route can easily be blocked at its main gateway, the Straits of Malacca. Yet, when both these two main routes are blocked, there is still a byway. Traffic can still find a way down the great rivers of Southeast Asia -- the Irrawaddy, the Salween, the Mekong, and the Red River -- diverging when convenient to the shorter rivers, the Sittang and the Menam. Time and again these rivers, and especially the Irrawaddy, have played a part in history.
>
> For the trade in spices from the Moluccas, the Straits of Malacca are of supreme importance; there is only one main route. But this narrow channel can easily be held against outsiders. When it is blocked, however, there are two byways. One byway is through the Sunda Straits between Java and Sumatra; repeatedly throughout the course of history we find mention of Bantam under various names, and of places close to Bantam -- Jakarta or Batavia, and Benkulen. There is also a second byway, from various points along the western coast of Burma and Malaya cutting across the mainland to the Gulf of Siam or continuing further to the Mekong and Annam.[7]

Colonization, Old and New

175 439 The search for gold following Vespasian's placing of an embargo on this precious metal from Rome during 69-79 A.D.

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[7] Ibid., p. 121-22.

175 was suggested by Furnivall as a cause of the foundation of
439 Indian trading centers at convenient sites along the coasts
648 and main rivers of Southeast Asia. The same author places
the date of the first Indian colonization in the area at about
150 A.D.[8] Harrison, however, maintains that the first definite
Indian settlements were established in the first century A.D.[9]

175 Indian settlements were typically colonial in the
177 old sense of foreign settlement without foreign rule. The
563 settlers came as traders, intermarried with the local people,
648 acquired wealth, and formed an aristocracy. Then, as new
migration ceased, the Indian rulers and aristocracy were
absorbed into the people. In the inscriptions, the language
and written characters took on native forms, and the names
of persons and places were no longer Indian but native.
Similarly, in the religious monuments and other buildings
a native style was superimposed on the earlier Indian models.

175 Most authors have credited these Indian settlers
177 with having brought Indian culture to Southeast Asia. Harrison,
648 for example, takes for granted that "Indians who voyaged
overseas to Southeast Asia naturally brought with them the
ideas and practices of Hinduism and Buddhism."[10] He further
speculates that "traders, adventurers and craftsmen were
followed by Brahman and Buddhist priests and teachers,

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[8] Ibid., p. 127.

[9] Brian Harrison, South-east Asia (London: Macmillan & Co., Ltd., 1954), p. 10.

[10] Ibid., p. 12.

175 carrying the civilizing influence of Indian cultural and
177 spiritual life and implanting it in these new lands by
648 introducing the art of writing and the classical Sanskrit
language and literature; bringing as well their own vernacular languages to enrich the vocabularies of Southeast Asia."[11]
175 It may be argued, nevertheless, that since there is little
177 good evidence for any *large* Indian emigration to Southeast
439 Asia, much Indian culture could have been *brought back* by
648 cosmopolitanized Southeast Asian traders who often spent
months in India waiting for the monsoons to change their
direction.[12] It should be noted in this connection that
during this time of early Indian colonization trade relations were also extended westward by Indonesians (who earlier
reached Madagascar) and other Southeast Asians.

175 During the expansion of Islam, from 1350 to 1500,
648 Moslem colonization followed the Indian pattern. Thus we
may say that formerly a colony was merely a settlement in
a foreign land and the settler had little or no political
[797] connection with the home land. The Indian and Moslem became
foreign rulers, but they did not establish foreign rule.
Subsequently, the Portuguese and Spaniards came as royal
agents and with a warrant from the Pope to undertake both
175 the conquest and conversion of the people. The old idea
648
563 of a colony as a settlement survived: there were grandees

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[11] *Ibid.*, pp. 15-16.

[12] The author is indebted to Professor Lauriston Sharp for the development of this idea.

175 with large estates, permanent immigrants of lower rank who
648 married native women, and priests spending a lifetime in
563 their parishes. But the colonies were ruled by Governors from Europe. They were both settlers and rulers. The Dutch came merely as traders, but they could obtain tropical produce only in the form of tribute; economic circumstances required them to accept sovereignty on behalf of the home company and to rule the people indirectly through native chieftains, and also to settle permanently, though on a comparatively small scale, to supervise native cultivation. They were primarily rulers and were settlers only by force of circumstance. In the 19th century the English carried the process a stage further. Through the industrial revolution they had goods to sell, and the object of their policy was not tribute but trade. This required direct rule, but not settlement, except in the ports. Finally, with the growth of capitalism and the opening of the Suez Canal, the typical system of colonial development was by foreign capital with European management and imported Asian labor. Thus there was a process of development from the old colonial system of foreign settlement without foreign rule to a new system of foreign rule without settlement.[13]

Impact of the Changing Trend of Trade with the West

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177 In the nineteenth century, the age-old means of com-
648 munication between the different parts of Southeast Asia

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[13] Furnivall, op. cit.

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648 were revolutionized by the techniques and aims of the West.
175 After 1850, European-owned steamships began the gradual
177 process of taking over the bulk of the inter-port trade
648 from native sailing boats and Chinese junks. The opening
439 of the Suez Canal in 1869 made possible the great modern
505 expansion of Western rule and trade, and thereby brought about the economic and social revolution which has created the Southeast Asia of today. The year 1870 is the real dividing-line between medieval and modern in the history of Southeast Asia.[14]

175 Whereas during the sixteenth, seventeenth, and eight-
177 eenth centuries the various European nations active in South-
433 east Asia had, on the whole, limited themselves to trading
439 and acquisition of high-priced nonbulky commodities, such
648 as spices, the economic policy of the nineteenth century called for large quantities of bulky goods, such as sugar, fibers, oil seeds, coffee, and copra. Since the peasantry of Southeast Asia, almost without exception, raised only subsistence crops and had only limited surplus, it became necessary for the colonial powers to increase agricultural production. This was done in two ways: through the application of pressure on the peasantry to produce for export, and through the development of large-scale plantation agriculture.[15] The shift of emphasis from trade to production

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[14] Harrison, op. cit., p. 197.

[15] Karl J. Pelzer, "The Resource Pattern of Southeast Asia," Southeast Asia in the World Today, ed. Phillips Talbot. Chicago: The University of Chicago Press, 1951, p. 109.

175 thus set a new stage -- the development of the natural
177 resources of the whole region.

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439 This change-over from a subsistence economy to a
648 commercial economy involved the large-scale expansion of
traditional crops or the development of new commercial crops.
[436] It was stimulated by the introduction or expansion of a money
[487] economy, the flow of capital and the development of land and
[69] sea transport. It was supported by Western technology,
methods of administration and systems of justice. This whole
process greatly affected the traditional institution, up-
175 setting the balance of a medieval world. The free, indi-
177 vidualist spirit of Western rule and commerce cut at the
[59] roots of traditional social life, undermining the corporate
[423] strength of family and village. But the most serious direct
[426] threat of the new economic forces was to the peasant's owner-
[566] ship of land. Expanding economies, new money taxes and cheap imports meant better business than ever for the money lender. Many peasants became ruined by debt and lost their lands. Indebtedness and debt slavery were not new in Southeast Asia; the latter was fairly soon stamped out, but the former now became much more widespread than before, resulting in the creation of a landless proletariat.[16]

184 Characteristics of Current Southeast Asian Economy

In spite of all the differences among the countries of Southeast Asia in the natural environment, ethnic

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[16] Harrison, *op. cit.*, p. 210.

184 distribution, and aspects of Western colonial policy which have tended to increase the contrasts between parts of the region, there are certain considerations of broader nature and of far-reaching significance that give validity to the concept of Southeast Asia as a regional unit possessing certain common features which will be discussed in brief as follows:

a. Common heritage of colonialism.
b. Dual economy.
c. Plural society.
d. Dominance of the agricultural section.
e. High rate of population growth.
f. Determination to industrialize.
g. Small size of market and slow rate of capital formation.

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648 The direction as well as the pace of economic development in the colonial or protected areas of Southeast Asia has been primarily determined by the overriding economic interests of the imperial powers. Even in Thailand, where political independence was preserved, economic dependence upon European capital resulted in the creation of a characteristically 'colonial' economy. This is exemplified by the following conditions: (1) producer of raw materials; (2) concentration on a few export products; and (3) lack of manufacturing industries. As a consequence, these countries are highly affected by substitution, price fluctuations, and changes in consumer demand. Furthermore, they are dependent on limited markets for export, and hence are adversely

433 affected by these few importing countries' determination
648 to be self-sufficient in food.

181 A dual economy as a distinctive character of colonial
433 rule is a theory propounded by some Dutch economists who
contend that in tropical dependencies there are two distinct
systems of economy. In the Western sector economic forces
act in strict accordance with the economic laws enunciated
by the earlier classical economists; but in the Eastern sector
these laws have no force, and Western economic principles are
inapplicable. The Western sector is ultra-capitalist since
economic forces act freely, not even subject to the social
inhibitions which still restrain them in Europe or the Western
world; the Eastern sector, on the other hand, is precapitalist,
with prestige carrying more weight than profit and communal
433 influence restraining the individual desire of gain.[17] One
438 of the consequences of a dual economy is that it is difficult
439 to conduct business because the people will not trade on
648 Western lines. Inefficiency in trade leads to high operational cost and thus to social waste. Moreover, there is a likelihood of exploitation of indigenous people by Western traders as well as by foreigners of Asian origin who are free from social restraint.

563 One feature that has long been common to the countries of Southeast Asia and is so obvious that it could not fail

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[17] J. S. Furnivall, "Cooperation, Competition, and Isolation," Southeast Asia in the World Today, ed. Phillips Talbot, op. cit., p. 71.

563 to impress even the most unreflecting sight-seer is the
medley of ethnic groups. What is almost equally apparent
565 is that these ethnic groups do not mix. Each has its own
571 quarter, its own temple, its club or other meeting ground
for social functions, its own forms and places of entertainment and recreation. They do not meet in these places but only in the market place to make money out of one another or perhaps with one another. They have no common link except in business. What is not quite obvious is that each ethnic group has its own special economic function. There is a plural society with its own distinctive and characteristic plural economy.

563 Typically, a plural society in Southeast Asia com-
565 prises three main sections: the Europeans, constituting an
433 upper class; the foreign orientals, Indian or Chinese, consti-
571 tuting a middle class; and the great mass of the native
population in the lower class. The Europeans and foreign orientals are temporary residents, strangers to one another or at best casual acquaintances, and the native community is little more than a crowd of individuals. In the relations between the classes, there are no social ties to dull the edge of economic competition. Within each class, inherited traditions lose their force. Society as a whole is divided into groups; each group is merely a collection of individuals, and in each group life is simplified to an economic struggle for existence. Social life is reduced to its economic content, society is converted into a business concern, and only the

563 foreign army of occupation has preserved it from disruption.
565 The essential and distinctive character of a plural society
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591 is that it is dominated by economic forces, and, outside a
few partly sheltered oases, Southeast Asia illustrates the
capitalist system in its purest form.[18]

162 Another common feature is the dominance of the agri-
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433 cultural section of the population. The latest available
171 figures show the percentage proportions of population dependent
on agriculture in the area as follows: Burma, 68; Indonesia,
66; Philippines, 69; Thailand, 85.[19] The same source indi-
cates the proportions for various regions of the world as
follows: North America, 20; Oceania, 30; Europe, 33; South
America, 60; Asia, 70; and Africa, 74.

171 With the prevailing techniques of production and the
433 consequent low productivity per man, dominance of agriculture
434 means low per capita national income. When countries are
grouped by level of economic development on the basis of per
capita national income as of 1950, all the six countries of
Southeast Asia -- Burma, Indo-China, Indonesia, Malaya,
Philippines, and Thailand -- fall in the underdeveloped
group.[20] Moreover, there is in Southeast Asia a true surplus
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464 population on the land in the sense that even under the
161 present methods of cultivation a sizeable fraction of the

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[18] Ibid., p. 77.

[19] Food and Agriculture Organization, 1953 Yearbook, Vol. VII.

[20] Eugene Staley, The Future of Underdeveloped Countries (New York: Harper & Brothers, 1954), pp. 16-17.

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161 man-power could be removed without significantly reducing
453 food output. Under this circumstance, not only the produc-
44 tivity of agriculture but also the opportunity for urban
47 industry to grow and flourish is hampered. A major obstacle to development of efficient manufacturing in underdeveloped countries is the small size of the market, which is in turn a consequence of the low purchasing power of the bulk of the people, most of whom get their living from the land.[21]

161 Southeast Asia has been characterized by its rapid growth in population. Broadly speaking, the region has been until recently one of very thin population. It seems probable that the whole of Southeast Asia in 1800 contained only about ten million people. Malaya then contained about a quarter million people, Java about four million, and Burma probably less than two million. It was, even at the end of the 18th century, a zone of labor shortage. But the last 150 years brought tremendous changes in population. It has been a period of tremendous population increases, causing people to swarm upon the more fertile areas, upon deltas and volcanic cones where people had not clustered before. By the quinquennium 1916-20, the total population of Southeast Asia had become 84 million, by 1936-40, 120 million, and by 1946-50 it was nearly 145 million.[22] This rapid population growth has been a great concern to students in economic

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[21] Ibid., p. 253.

[22] E. H. G. Dobby, Southeast Asia (London: University of London Press Ltd., 1951), p. 386.

161 development who fear that these countries might not be able
433 to expand their production faster than population expands,
in which case the result of economic development efforts
will be a greater quantity of people with little or no gains
in the quality of living conditions. In Zinkin's words,
"The growth of population and the impact of the West have
between them, in the last hundred years, so upset the delicate
balance that most of the Asian countryside is now bankrupt
. . . . The alarming feature of the peasant economy of Asia
is not simply that it is desparately poor. It is that in
recent decades, and in most countries of Asia, it has been
growing poorer. It is a changing, dynamic economy. But it
has been changing for the worse."[23]

433 Poverty is not new in Southeast Asia. What is new
829 is the awareness of poverty and the conviction that something
178 can be done about it. "A great change", reported Harold
Butler, "is stirring Eastern society. The consciousness
of misery has been created by the growing realization that
it is not the inescapable lot of the poor and that chances
654 of better life now exist."[24] All of the countries in South-
648 east Asia have within the past decade set up official agen-
185 cies charged with planning and promoting economic development;
and for international assistance to hasten it, is the constant

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[23] Zinkin, *op. cit.*, p. 34.

[24] Harold Butler, *Problems of Industry in the East* (Geneva: International Labor Office, 1938, Studies and Reports, Series B, No. 29), pp. 65-66.

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648 theme of their spokesmen in the economic and social organs
185 of the United Nations. It is probably too early at this
moment to speculate on the outcome of Southeast Asia's
000 determination to industrialize. Much can be said, however, about the element of urgency and speediness commonly attached to each project of industrial development envisaged by each of these countries. "For successful development," cautions Staley, "two things are necessary: a substantial and continued economic advance -- and a social and political outcome which produces self-reliant citizenship in a free society, stable and responsive democratic government, and cooperation with other free societies."[25] The same writer warns that if capital investment and material technology are puched energetically in an underdeveloped country while little or no attention is given to deliberate promotion of appropriate social and psychological change, the result is likely to be either a failure of the development process to "take" and become "self-generating" or creation of a menace to the free world.[26] Garner also gives similar warning, "People have to develop themselves before they can change their physical environment, and this is a slow process."[27]

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44 A most important factor that has kept Southeast Asia economically underdeveloped is the small size of market in

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[25] Staley, op. cit., p. 202.

[26] Ibid., p. 203.

[27] Ibid., p. 203.

7: Janlekha X-4,5 (1948-1953) 1956 AO7 Central Thai
Southeast Asia AL1

45 44 each of the countries in the area, which is due to the low level of their real income. This small size of market has important effects on the volume of international trade, on the pattern of foreign investment, and on the use of domestic savings.

648 43 44 47 Because of their low level of productivity and hence of low real purchasing power, the underdeveloped agricultural countries play a minor part in world trade. Business investment abroad has tended in the past to shy away from industries working for the domestic market in the underdeveloped areas and to concentrate instead on primary production for export to the advanced industrial centers. With special reference to Southeast Asia, most writers assign the pattern to the commercial design of the colonial powers. Nurkse, however, maintains that it does not reflect any sinister conspiracy or deliberate policy, still less any concerted attempt of the rich countries to exploit the poor. "Exploitation there may have been," he said, "but this pattern of foreign investment by itself does not constitute any proof of it. This pattern can be readily accounted for on obvious economic grounds. The explanation lies, on the one hand, in the poverty of the local consumers in the underdeveloped countries, and on the other, in the large and, in the nineteenth century, vigorously expanding markets for primary products in the world's industrial centers."[28]

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28. Ragner Nurkse, Problems of Capital Formation in Underdeveloped Countries (Oxford: A. T. Broome and Son, 1953), p. 25.

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454 Finally, the weakness of the market incentive for private investment in the domestic economy of the low-income countries can affect domestic as well as foreign capital. The first difficulty is that the volume of domestic saving is small, because of the low level of income. But then there is the further trouble that such saving as does take place tends to be used unproductively: it tends to be put into real estate, gold, jewelry, commodity hoards and hoards of foreign or domestic currency. While this unfortunate tendency is usually explained by reference to inadequate financial organization or lack of education, Nurkse suspects that the tendency may also reflect a more deep-seated economic condition -- the deficient inducement to invest due to the poverty of the domestic market.[29]

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157 Cultural Background of Thai Peasants

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[461] Benedict describes Thai characteristics as indolent, unwilling to labor for more than immediate needs, content with their lot, uninterested in money or economic advancement, conservative, and satisfied with a dependent status.[30] These characteristics have led to preference for agriculture, government service, and self-employment in general to other occupations.

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[29] Ibid., p. 26.

[30] Ruth Benedict, "Thai Culture and Behavior" (an unpublished war-time study dated September 1943, Data Paper number 4, Southeast Asia Program, Cornell University. Ithaca: Department of Far Eastern Studies, 1952), pp. 34-45.

[181] Until recently, the Thai peasant lived in an underpopulated and fertile land where the requirements for subsistence were modest and easily obtained. Under such circumstances he saw thrift as of limited value and work for its own sake as senseless. In the Thai universe, consumption and enjoyment were the immediate stuff of living itself, never postponed, ultimate ends. The Thai learned to enjoy life and live it in the present; there was no pressure to do otherwise.[31]

The Thai peasant had no place in an historical con-
[551] tinuum of kin. He did not even use a surname.[32] Immediate
[769] ancestors were honored by cremation (which was in part an honor to the sponsoring descendant himself) and then were usually forgotten. There was no ancestral cult and no kin responsibility outside the immediate or extended family.
[771] His religion, the Hinayana Buddhism, emphasized individual merit-making and salvation, and condemned as worldly any excessive concern for the material advancement of self and family.

[554] Values for the Thai masses were not elite-centered.
[772] The Thai peasant could obtain prestige and come closest to achieving his spiritual ends by entering the Budhist priesthood, a step which in itself involved no upward mobility.

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[31] Skinner, op. cit., p. 112.

[178] [654] [369] [32] Surnames were officially adopted during Vajiravudh's reign (1910-25), but were rarely used in the countryside.

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463 Finally, the institutionalized status of the masses precluded the personal freedom and geographical mobility necessary for competition in new economic ventures. The system discouraged even the further development of Thai craftmanship and special skills. Agriculturalists had fewer obligations and a less coerced life than the artisans. Under these circumstances, as mentioned earlier, Thai initiative and creativity were stifled.[33]

Commercialization of Rice Growing

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439 The Bowring Treaty (1854), the opening of the Suez Canal (1869), the abolition of slavery (1874-1905), and the abolition of the corvee system (1899); all occurring in the second half of the nineteenth century, may be considered as the four major events that directly or indirectly contributed to the revolutionary changes in Thai society in the early modern period. The gaining of freedom of the Thai masses, the free trade opportunity opened to the Westerners, and the improved transportation facilities had resulted in the tremendous expansion of rice cultivation and phenomenal growth of rice export.

[311] In 1850, the total area planted to rice was estimated at 5.8 million rai. The area had risen to 8 million by 1905, and it steadily rose to a peak of 34.6 million 1950. On the export side, the average annual export of rice during 1857-59 was 990,000 piculs. After a slow erratic rise up

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[33] Skinner, op. cit., p. 118.

175 to 1870-1874, the volume rose rapidly to a peak of 25.7
178 million piculs in 1930-34. This 25-fold increase over the
*243 probable maximum volume at the time of the Bowring Treaty
439 which took place while the population doubled itself repre-
433 sented the major economic change in Thailand since 1850.
To be sure, some rice was being exported prior to the Bowring
Treaty, but the fact that such exports did exist does not
detract from the importance to Thailand of the growth of
rice exports since then.[34]

178 This marked growth of exports was accompanied by a
*243 comparable growth in total imports as the population of Thai-
433 land tended to specialize more and more in the production
[439] of one single crop -- rice. Thus money came to play an
[436] important role in an economy in which it had formerly been
of but minor significance. As villagers turned to the pro-
duction of money crops, the household crafts were forgotten.
[242] Cotton fields, prominently mentioned in the classics produced
during the golden age of literature in the reign of King
Rama II (1809-24), were perhaps used for rice or abandoned
in favor of land suitable for rice.

[654] This vast extension of rice cultivation was carried
on almost entirely by the Thai themselves and by individuals
acting on their own initiative, not to any significant extent
by government or private resettlement programs. The land

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[34] James C. Ingram, Economic Change in Thailand since 1850 (Stanford: Stanford University Press, 1955), pp. 37-40.

178 243 311 503 most accessible to transportation was the first to be taken up. During the second half of the nineteenth century this meant the Central Plain where the existing network of canals and streams provided a cheap and convenient means for transporting rice and paddy to Bangkok. Since the areas along the banks of the rivers had already been settled under the self-sufficing economy long before the advent of commercialization and during which time the problem was one of labor shortage rather than population pressure, new rice fields had to be cleared out of the hinterlands eastward and westward from the rivers which run from north to south. [654] This was made possible by the extension of the government sponsor canal construction program during the period. Furthermore, the irrigation projects initiated in the first decade of the twentieth century also brought much of the submarginal [134] land into productive use. It may be assumed, however, that these newly cleared areas were less fertile than the long settled flooded areas along the river banks where soil fertility was replenished each year by the annual flood.

●●● Against the background which has just been described we are now in a position, from the next chapter on, to confine out study to one rice producing village which has been recently settled, using it as a model for discussion of economic problems of Thai farmers and Thai agriculture in a changing world.

PART I

000 THE COMMUNITY AND COMMUNITY ECONOMY

CHAPTER I

METHODOLOGY

Since 1947 Cornell University has been sponsoring 121 a number of studies in community development in various parts of the world. "All of these studies are multiple approaches to a central problem: What are the basic factors involved in the process of cultural change? In the Cornell studies of changing human behavior it is postulated that in any society no one element of change can be clearly understood except in relation to other elements. Biological factors -- birth rates, disease, malnutrition -- must be investigated in relation to the physical environment and the total culture of the society in which they occur. Functional aspects of culture -- family life, economy, education, religion -- must be studied in relation to each other rather than simply as isolated segments of group life."[1]

121 This study of the economy of a rice growing village 114 in Central Thailand is a part of the Cornell University Thailand Project which includes studies carried on by a group of research workers representing a variety of disciplines. The field work was begun in 1948-49 and was resumed in 1952-54.

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[1] Alexander H. Leighton and Lauriston Sharp, "Notes for Field Research Workers" (Department of Sociology and Anthropology, Cornell University, New York, 1952), p. 1. (Mimeographed.)

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Reasons for the Choice of the Field Site

After an extensive survey of a number of possible sites in the Central Plain, the community of Bangchan, some twenty miles northeast of Bangkok, was selected for intensive study. Among factors leading to this choice were the following: (1) accessibility from Bangkok, about forty minutes by car with optimal road conditions, and about two and a half hours by launch -- an important advantage because it was desired to maintain contact with events in the capital, to utilize research and other facilities there, and to work in a community which Thai from Bangkok or vicinity could easily reach should they participate in the research; (2) availability of a fairly concentrated population of over 1,600 almost entirely engaged in rice production; (3) production of a large surplus of rice sold to nearby Chinese millers for export; (4) local use of two alternative methods of growing rice -- transplanting and broadcasting; (5) presence of an active religious institution or wat; (6) presence of a large government primary school; (7) artificial division of the community between two administrative units or amphur, providing an exceptional opportunity for comparative study of local government; (8) presence of a small number of Moslem Thai, permitting study of this important minority group; (9) almost complete absence of Chinese residents, but dependence upon outside Chinese itinerant vendors or nearby traders and millers, permitting study of Thai-Chinese relations; (10) a wide range of variation with respect to individual

121 621 experience outside the community, from persons who had never before seen any foreigner to others familiar with Bangkok or smaller centers of modernizing influence; (11) prospects of a fair degree of physical security from robbery or other violence during the study; and (12) the promise of excellent cooperation on the part of both peasants and officials of the region.[2]

121 A majority of the sites visited or heard about during the preliminary survey proved unsatisfactory for one or more of the following reasons: (1) they were too specialized (fruit or truck gardening, brick or pottery making, proximity of a naval establishment, preponderance of non-Thai or non-Buddhist groups); (2) they consisted of amorphous groups of sub-marginal tenant farmers exhibiting marked signs of social disorganization; or, most commonly, (3) they were decentralized and the dispersal of homesteads along canals would have required an inordinate amount of research time spent in moving about in order to communicate with the people.[3]

121 184 *243 Although caution has been exercised to select a community most closely approximating a representative village of the Central Plain, we do not purport that economic conditions described in Bangchan are identical with those of other villages in the region. Bangchan's representativeness

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[2] Lauriston Sharp, "First Progress Report on Cornell Thailand Project, August 1-November 1, 1948", p. 2. (Mimeographed.)

[3] *Ibid.*, p.2.

121 184 #243 can later be checked through studies in a nearby control village and by comparison with results of the 1953 agricultural census. Nevertheless most of the problems of rural rice growing communities in central Thailand undergoing technological changes are expected to be found in Bangchan. We are confident, therefore, that the community is an appropriate model for locating agrarian problems and is a good site for a pilot study which is to serve as a base-line for further researches in agricultural economics and other social sciences.

Techniques for Establishing Rapport

129 Our first contact with Bangchan residents was made on September 1, 1948, when Professor Lauriston Sharp and the author were driving home from Minburi. We stopped over at a farm house on the side of Minburi Road two miles from the market town and introduced ourselves to a small gathering of farmers. We told them that we were both teachers, Sharp teaching in the United States and Janlekha in the nearby Kasetsat University, and that we were looking for a typical village where "Professor Sharp might study the real life of Thai farmers so that he could tell his American students how we live and work."

The place where the conversation was taking place was on the periphery of Bangchan village -- the western tip of Hamlet 4, Bangchan Commune. While one of the farmers was explaining the general condition to us, he was interrupted

123 by another farmer who was identified as Headman Weg of Hamlet 6 of the same commune. Weg said his hamlet has more people and more buffaloes, and invited us to his home which is on the other extremity of the village. Arrangement was made for a boat to carry us there on the appointed date two days later. Thus we were invited into the village by one of the leading residents who took pride in the possibility of a study of his village by an American professor.

124 At the beginning, we sought from the villagers only simple information. After the first month, when it became clear that confidence had been won, more intimate questions concerning economic matters were raised. Thai peasants do not take questions about family relationship or age as intimate questions; they even enjoy answering them. It was noticed, however, that some types of questions brought better response than others. We did not attempt to get all the information we needed at the first interview, and only the topics which appeared to interest the respondent were pursued. We did not set any rigid rule on the length of an interview period but left it up to the apparent disposition of the interviewee. It was observed, however, that normally distraction began to set in after the first half-hour. We usually stopped at this point. If the conversation had to be continued, we made it apparent that business was over by laying aside our pencil and notes. In every possible way we tried not to offend respondents. Not infrequently we brought an interview to an end within the first few minutes

124 when only a slight sign of distraction was noticed. Our daily visits to this small concentration of population gave re-interviewing a much higher advantage over a prolonged interview. Experience with Bangchan people revealed that occasional non-response was not due to the subject matter but rather to the approach and circumstances. With a more tactful approach and under a slightly different circumstance in a subsequent interview, we were able to obtain most of the information we sought but did not get in the previous interview.

123 To return the hospitality rendered us we offered small personal services like a lift or taking the sick to Bangkok hospitals. We tried to avoid monetary gifts to individuals which might lead to distorted information intended to please us, but we did give monetary gifts to public institutions like the school at an opportune time. We were particularly anxious to help the community as a whole especially in the fight against epidemics. Incidentally, Bangchan will always remember our active part in bringing the veterinarians to the village in time to check the spread of rinderpest in the end of 1948. From then on the villagers tended to think of us as a most effective means to communicate with high officials in Bangkok. This conviction was reinforced by subsequent visits of top level officials to the village which were unprecedented. In the second period of study in 1952-54, we were able to render medical aid and advice. We also played a significant role in the campaign

123 to get government support for the new school building.

Our non-official status relieved us from the responsibility of direct action and thus gave us the immunity from any criticism when sought help had not been responded, while in any event we enjoyed the privilege of the contact men. In the eyes of Bangchan villagers, we were equated with high officials and were given due respect. At the same time, as willing contact men, we were also thought of as good friends of Bangchan.

We did not, for a moment, seek to be admitted as if we were local people, which would appear to be artificial and which might be interpreted as insincerity. It seemed to us, nevertheless, that our sincere treatment of the villagers with some reservation as our equals -- a rare privilege in their experience -- was the most important factor militating in favor of our good rapport with Bangchan.

Techniques for Gathering Informations

12 Various techniques were used in securing information, each adopted with a view to procuring the best possible result under different circumstances. In general, information may be classified according to the methods used in obtaining it as follows: (1) structured questionnaires and check lists;[4] (2) informal interviews; (3) daily records of research workers; and (4) supplemental written records made by local residents.

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[4] See Appendix B.

12 Normally four daily visits were made to the village in each week with occasional overnight stays of two to four days. A field office was established in a house of one of the village headmen, who generously let us have free use of one of his buildings situated in the heart of the community. We usually slept here during an overnight stay, but some dozen other places were also available to us for the purpose including the temple, and we did actually have occasion to utilize each of these in order to get acquainted with as many families as possible.

All of the questionnaires and check lists were constructed in the field after a succession of talks with different informants about the same topic. The check list for household consumption, for example, was made in the following manner. The author approached one family head, preferably the one most intimate with him, and talked with him about various items which his family normally consumed. Kinds and quantities were recorded. Questions were also asked about the amount produced by the family and the amount purchased as well as the price of each of the purchased items. There were usually different ways of expressing rates of consumption of different items, and the informant was encouraged to use the ones he pleased. Rice consumption, for example, was commonly expressed in so many tang (a can of 20 liters) of paddy per year, while fish-sauce consumption was more easily expressed in how long a bottle would last. After the first interview was completed, four more family

12 heads were similarly approached. Results from these five interviews were then compared, and a pattern of consumption was established. With this combined result the author went to the coffee shop, which was a sort of men's club, and got the talk started about the topic. A few more items of consumption were added to the list this way. After the final check list was constructed, the five family heads were reinterviewed. All admitted that they had skipped the missing items.[5]

The author himself administered all, except one, of the whole enumerating jobs, the exception being the work on household and farm inventory. After he had tried to take such inventory of a few farm families, he realized that his sense of observation and his ability to appraise the value of household and farm equipment was far inferior to even the most humble of the local farmers. This was to be expected, since unfamiliarity with the local scene is a heavy handicap to that kind of work. Two bright young men, both local residents, were then hired as field assistants to do the work jointly, each checking the other.

Evaluation of Data

Since various techniques were used in securing information and an individual was approached several times for different types of information, relative merit of data varied according to their nature as well as the technique adopted

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5. For check list of household consumption see Appendix B.

12 in gathering them. An over-all evaluation of data, therefore, cannot be made. Evaluation will be attempted, however, each time a new set of data is introduced as we go along.

CHAPTER II

THE COMMUNITY

Geography

131 The community of Bangchan is situated some twenty
road-miles northeast of Bangkok in the heart of the economically all-important commercial rice growing area of central
361 Thailand. Surrounded by their rice fields, the population
[161] of about 1,600 persons lives on some three hundred small
[503] family homesteads scattered along a half dozen connecting
*[243] canals. The community occupies an area of 6,500 rai,[1] or
2,600 acres, all of which, with the exception of about 300
rai of homesites and narrow strips bordering canals, is given
over to the production of wet rice.

134 The soil of Bangchan area is heavy dark clay with
*243 an impervious layer at a depth of about six to eight inches
and is suited only to rice growing.

133 The area is essentially flat, rising slightly toward
312 the north. It receives, in addition to rain water, irrigation water channeled into it through the Saen-saeb Canal one
mile to the south, Samwa Canal one mile to the east, and
Khlong-song Canal one mile to the north.[2]

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[804] [1] One rai is equal to two-fifths of an acre.

[2] See map on page 162.

192 The monsoon climate of the region in which the
village lies gives the area an annual rainfall, averaged
over a recent ten year period, of about fifty inches; the
effective rainfall, for the critical months when the rice
B-243 is in the ground, is about forty inches.[3] The minimum pre-
312 cipitation requirement for wet rice is about seventy inches
a year. This rainfall deficiency in the central plain of
Thailand is made up by direct flooding from the rivers which
flow in from the mountains and plateaux on the northeast,
north, and west, the run-off rate fortunately being low be-
cause forests still cover much of these uplands. The whole
plain is channeled for simple distribution of the spate of
these rivers which occurs during October, November, and
December, just before the harvest of rice. Because most
fields are fed by gravity without an artificial head of
water, or with only small heads impounded behind water gates,
the depth and duration of flooding cannot be wholly controlled.
As a result, variable water supply produces a wide variability
[195] in harvests and crop risks may be considerable. For 117 years
[731] between 1831 and 1948 the ministry of Agriculture records
four major damaging floods (1831, 1879, 1917, and 1942),
four years of extreme drought, thirty-five years of severe
drought, and twenty-one years of moderate drought, leaving
only fifty-three years of optimal supply of water.[4]

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[3] Central Service of Statistics, Statistical Yearbook of Thailand, No. 21, 1939-40-1944. Bangkok, 1950.

[4] Ministry of Agriculture, Thailand and Her Agricultural Problems (Bangkok, 1950).

132 The normal distribution of rain in the region, how-
*243 ever, is almost ideal for single crop rice production. Heavy
rainfall in May and June softens the soil for easy plowing
and harrowing. During July and August, when the young plant
does not require much water, the rainfall moderates. Again
there is heavy rainfall in September and October when the
maturing plant needs rising water as it shoots upward. Fin-
ally, during the harvesting season of December and January
there is a minimum of rainfall. It is in terms of rainfall
that the people divide the year into three seasons: (1) the
rainy season of late May to November; (2) the cold season,
December into early February; and (3) the dry hot season
from late February to early May.

Vegetation

*243 Of the 6,404 rai privately owned in Bangchan 6,106
137 rai is devoted to rice and 298 rai to homelots. During the
[311] rice season the village is seen as a vast rice field inter-
[351] spersed with bamboos and fruit trees on the homelots which
[361] string along the half dozen canals of the village. In the
[312] dry season only stumps of rice stalks are left in the field.
132 Some of these may be removed by burning. With the coming
231 of rains, which usually fall once or twice in March and four
or five times in April, a variety of grasses begin to appear
and the rice field is gradually transformed into a grass
field, providing a pasture for the buffaloes until the next
planting season when the size of the grass field available

#243
132
137 to the buffaloes will be gradually reduced by the process
231 of land preparation.

244
245
351 The homelot is usually surrounded on all sides, except the one facing the canal, with bamboos which serve to protect the farm home from strong wind. Within this compound there always is a kitchen garden where a variety of plants and vegetables for everyday use are grown. If the homelot is large, there may be enough room at the backyard for an orchard where fruit trees may be grown. In some case aquatic plants are cultivated in the canal in front of the house.

137 In addition to cultivated plants, there are to be seen also wild shrubs and vines which are more or less restricted to small strips of land along the banks of the cana Wild aquatic vegetables, especially the morning glory, are always seen in these canals, making them appear narrower than they actually are.

Livestock

231 Buffaloes: As in most of the rice producing areas of the country, so in Bangchan buffaloes are used in all kinds of farm work where the help of draft animals is needed. Since the village is without land which can be grazed the year-round, buffaloes are not locally bred but are brought in from the northeast and other parts of the kingdom. To be sure, there are some local-born buffaloes, and these are considered to be stronger and to live longer than the importe

231 ones, but limited grazing areas and the burden of work imposed on them have been a factor militating against their reproducing themselves. During the first half of the rice year (April-September) buffaloes feed on green grasses, direct in the field which has not yet been plowed or cut for them by the farmers. During the second half of the year when the supply of green grasses is reduced to the minimum, they feed on straw which normally lasts until new grasses become available with the coming of rains. Buffaloes are used only for farm work and never for milking purposes.

235 Chickens: Practically every family in Bangchan raises chickens which are second only to rice as a source of cash income. Many breeds are found in the village. Most common are the native mixed breed and the imported Rhode Island Red. These chickens are raised "naturally" -- although the farmers feed them with paddy once in a while, most of the time they help themselves to paddy in the mat bins and in addition scavenge for a part of their feed. The size of the flock averaged 8.6 laying hens per family according to the 1949 survey. The same survey showed an average rate of production of 143 eggs per laying hen per year.

Ducks: In 1949, only one-half of Bangchan residents raised ducks but the size of the flocks was slightly larger than that of chickens, averaging 11.7 laying ducks per family raising them. The annual rate of production, too, 235 was slightly higher than that of chickens, averaging 155 eggs per laying duck.

198 271 Hogs: In 1949, two families were raising hogs which according to our observation did not seem to be well fed. When we returned to the village in 1952, not a single hog remained in Bangchan.

Fish

262 443 434 After rice, fish (and other marine animals) are by far the most important ingredient in the diet of Bangchan. More fish are bought from the outside than the very small amount that is exported from the village mainly by one or two very poor families who have availed themselves of this means of augmenting their income.

221 226 The villagers' annual cycle for fish-taking varies somewhat with the particular method used, and with the annual rice and ceremonial cycles: yet the maturation cycle of the principal types of fish is also a factor, and one which tends to give an overall orderliness to the annual cycle for fish in general. There is no time in the year when at least some fish are not available, nor is there any time in the year, even the busiest, when the family does not want fresh fish for its menu. For this reason, there is fishing the year round, at least in the form of the housewives simply setting nets in the canal and then tending them according to some schedule or whenever the noise of caught fish sloshing about in the water is heard. When a lull from the pressure of

221 other activities permits, members of the family are likely
226 to be seen fishing.

The period of late December through February is the period in which the canal fish are mature and most delicious to eat. Notwithstanding that this is the busy harvest time, it is also the busiest catching period, because it is at this time that many of the more important varieties of marine animals mature. Shrimp, for example, is available for only about twenty days during January. While this period is correctly described as the rice harvest time for the community as a whole, almost all individual families are likely to have lulls of a few days between the maturation of one rice variety and another. Such lulls are devoted to intensive fishing.

There is less urgency in the "harvesting" of fish by pool-draining methods than there is in fish-catching. The first pool-draining might occur as early as February, or as late as May; a second and even a third draining might occur later in the year. There are biological factors underlying this, such as the presence on the banks and bases of the pools of a longer-lasting supply of plant food for the fish than is available in the canals, especially since the canals tend to recede more and more as the dry season progresses until, in the higher northern section of the village, they dry up completely well before the onset of the rainy season.

T

Place of Bangchan in the Administrative Area

63 In the highly centralized system of Thai administration, the whole country is divided into 9 circles (pharg), 71 provinces (changwad), 414 districts (amphur) and 77 sub-districts (king-amphur), 3,650 communes (tambol), and some 50,000 hamlets (muban).

CT 621 634 121 In the section on reasons for the choice of the field site (page 32)[a] mention was made of an artificial division of Bangchan between two administrative units. By that we mean one part of our "natural" or "functional" Bangchan village administratively belongs to one amphur and the other part belongs to another amphur. The situation will become more vivid when we discuss our "natural" Bangchan village.

CT

Our "Natural" Bangchan Village

621 121 In this study we are not interested in an administrative unit which is often an artificial division, but rather in a "natural" or "functional" village which may be operationally defined as a geographical area inhabited by a conglomeration of people having one or more common social centers.

CT 621 794 872 Bangchan people patronize an active Buddhist religious institution popularly known as Wat Bangchan, and an adjacent government primary school, both centrally located in the community.

CT 621 *128 For practical reasons for ease in statistical manipulation, we assume that the smallest administrative unit --

[a] [Erratum: this should read "page 36"---Analyst]

621 *128 the hamlet or muban -- is indivisible, although as a matter of fact a Thai hamlet is actually made up of individuals and families. We proceeded, then, to draw the boundary line of our natural village by first selecting Wat Bangchan as the social center and defining the natural village as composed of all hamlets whose headmen and the birth of whom population patronized this wat. The hamlets thus included were found to be Muban 4, Muban 5 and Muban 6 of Tambol Bangchan, Amphur Minburi, Changwad Phra-nakorn, and Muban 5, Muban 6, Muban 7 and Muban 8 of Tambol Kannayao, Amphur Bangkapi, Changwad Phra-nakorn. For the sake of brevity these seven hamlets will henceforth be referred to as BC4, Bc5, BC6, KY5, KY6, KY7 and KY8 respectively.

[872] We then checked the list of students enrolled in the primary school which is adjacent to the wat and found that most of the families residing in the seven hamlets sent their children to this school and that only a negligible fraction of the student body consisted of those from other nearby hamlets.

Our "Bangchan Village" may thus be defined as an area within the composite boundary line of BC4, BC5, BC6, KY5, KY6, KY7 and KY8. This is an area of about 6,500 rai (of which 6,404 rai are privately owned), assuming a somewhat circular shape and having as its centers Wat Bangchan and the adjacent Bangchan Primary School (see Map I).

361 312 Across this "Bangchan Village" and through its center runs a main canal, the Bangchan Canal, in a northeast-southwest

361 direction dividing it into two halves, the Bangchan half
312 consisting of BC4, BC5, BC6, and the Kannayao half consisting
oof KY5, KY6, KY7 and KY8.

621 As mentioned earlier, our functional Bangchan villag
634 is under two different administrative authorities, the Bangchan
half consisting of part of Tambol Bangchan which is in
turn part of Amphur Minburi in Changwad Phra-nakorn (Bangkok
and the Kannayao half consisting of part of Tambol Kannayao
which is part of Amphur Bangkapi in the same Changwad Phranakorn.

History of Settlement

174 No official records on the history of the settlement
361 of Bangchan could be discovered, but evidence from genealogies
[603] provides a few clues on the subject. Following the
digging of Saensaeb Canal some one hundred and twenty years
ago, settlement was made along the banks of this important
canal which provides one of the few connections between the
175 Menam and Bangprakong rivers. It was not, however, until
621 the 1870's, apparently, that people found it necessary to
361 move onto the land away from the canal. At that time, according
to one of our older informants, her father was born
in what is now Bangchan, his father and mother having come
out from Bangkok as a young married couple to take up farming
175 where plenty of land was available from the Crown. These
621 people and their followers, usually kinfolk or friends, clear
off scrub jungle areas in which, it is claimed, tigers and

175
621 elephants still roamed. They thus opened up to commercial rice production a new region lying behind the thin fringe of population already occupying all land bordering Saensaeb Canal.

The genealogies suggest that it was not until the 1880's that any major settlement occurred in Bangchan. There is doubtless a correlation between the rapid development of the community from then on and the increasing national and international demand for rice. Many of the settlers of this period were persons displaced from a southern and a northern section of Bangkok who were uprooted by the government which forced purchase of their land for the first Thai railroad and a large munitions factory. The Thai Islam or Moslem group in Bangchan claims descent from Patani Malays who were sent north by the Thai government in the course of wars during the 1830's and 1840's; many of their families settled in Donburi or along Saensaeb Canal before moving into the Bangchan area. Another element came into the region in the 1890's when some Lao Thai were encouraged to settle here after having fled their countryiin the northeast when the French occupied it in 1893.

[173]
[794]

By 1895 the Bangchan population was sufficiently numerous to support its own wat, which was established and officially recognized about that time and has flourished ever since.

Population

161 A census covering all households of the seven hamlets defined as constituting the Bangchan village was made during the late months of 1948 and the early months of 1949 and was finally corrected and established for May 23, 1949. On this date there were 1,582 persons residing in Bangchan.[5] In a subsequent census made in 1953, the population rose to 1,694, giving an increase of 112 persons during the four elapsing years. Table 1 shows that there was not only an increase in the total population but also in the average size of the family.

While figures in Table 1 indicate an annual compound rate of increase in population of 1.7 per cent and an annual compound rate of increase in the size of the family of 0.5 person, these annual rates should not be accepted at face
161 value. It was observed that population moved freely between
162 Bangchan and the bordering villages. The extent of migration to and from Bangkok is also quite large. Moreover, the size of the family depends on a number of factors, some of which are of temporary influence.

The preliminary study based on the village census of 1949 indicates that Bangchan was not troubled with a burgeoning population. According to that study, "Children

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[5] The population figure of 1,608 was reported by Lauriston Sharp, Hazel M. Hauck, Kamol Janlekha, and Robert B. Textor in "Siamese Rice Village -- A Preliminary Study of Bangchan, 1948-49." This new figure was arrived at after obvious errors such as duplications and omissions in the original census had been detected.

(TEXT CONTINUED ON PAGE 59)

TABLE 1

POPULATION OF BANGCHAN IN 1949 AND 1953

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Hamlet	May 23, 1949 Families	May 23, 1949 Persons	May 23, 1953 Families	May 23, 1953 Persons	Increase Families	Increase Persons
BC4	43	250	40	236	-3	-14
BC5	27	136	28	136	1	0
BC6	44	251	47	270	3	19
KY5	54	305	63	356	9	51
KY6	28	156	31	168	3	12
KY7	43	231	42	250	-1	19
KY8	49	253	47	278	-2	25
Total	288	1,582	298	1,694	10	112
Av. fam. size		5.5		5.7		0.2

TABLE 2

DISTRIBUTION OF POPULATION BY AGE AND SEX
Bangchan, Thailand, 1953

Class Interval Years of Age	Frequency			
	Male	Female	Total	Per Cent
Young	(327)	(317)	(644)	(38)
0- 4	115	107	222	13
5- 9	98	107	205	12
10-14	114	103	217	13
Adult	(431)	(449)	(880)	(52)
15-19	84	102	186	11
20-24	87	77	164	10
25-29	57	68	125	7
30-34	45	51	96	6
35-39	37	43	80	5
40-44	41	45	86	5
45-49	44	34	78	5
50-54	36	29	65	4
Old	(85)	(85)	(170)	(10)
55-59	27	29	56	3
60-64	25	24	49	3
65-69	17	12	29	2
70-74	8	7	15	1
75-79	7	7	14	1
80-84	0	5	5	0
85-89	1	1	2	0
Total	843	851	1,694	100

161 in the age group 0-4 years constituted 17 per cent of the
162 total Thailand population reported in 1937, yet this age
group is only 10 per cent of the present /1949/ Bangchan population. The estimated crude annual birth rate -- 1/5 x children 0-4 years divided by total population x 1,000 -- is 20.3. This figure is slightly lower than the actual rate because infant mortality is not taken into account, but it may be compared with the following crude rates: Burma, 32.3; India, 33.0; Philippines, 32.4; United States, 17.9, all for 1939; and Federal Malay States, 39.7, for 1940. The Bangchan fertility ratio -- children 0-4 years divided by females 20-44 years multiplied by 1,000 -- is 620, actually less than the fertility ratio of 752 for the United States rural native white population in 1950.[6] This somewhat optimistic picture fades, however, in the light of the data of the 1953 census of the same population taken only four years later. From Table 2 the crude birth rate as of this later date may be estimated at 26.2, approaching those of prewar Burma, India and Philippines, while the fertility ratio has now become 779, a gain of 159 placing it higher than that of the 1950 United States rural native white population. These abrupt increases in the figures for birth rate and fertility ratio in themselves are not of much statistical significance, since the population is small and infant mortality and migration factors are not considered.

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6. Lauriston Sharp, Hazel M. Hauck, Kamol Janlekha, and Robert B. Textor, Siamese Rice Village -- A Preliminary Study of Bangchan, 1948-49 (Bangkok: Aksoniti Printing Press, 1954), p. 25.

The Family

592 Although the family is the smallest of social institutions,
it occupies first rank in importance. For the purpose
of this study family is defined as a group of persons
who form a household under one head including parents, children,
servants and other dependents. It is a social unit
[264] for both consumption and production. In Bangchan, members
[464] of the same family, with the possible exception of piece-
[463] workers who have the privilege of eating with their employers
only during periods of certain kinds of work, usually share
the same meal although not necessarily at the same time.
Physically able members are expected to contribute to family
work although some may also do extra jobs for their own pocket
money. In all cases family work has priority over the extra
job, and in most cases members turn over all or part of the
[354] earning thus realized to the family head. Although most
[184] families have separate dwellings, there are instances of two
families sharing the same dwelling but having separate cooking
[464] arrangement. Such cases are rare, however. According
[463] to our operational definition, then, a member of a biological
family who has hired himself out as regularly hired laborer
ceases to be a member of his own biological family and becomes
a member of his employer's family. Piece workers, on
the other hand, although they may occasionally eat with their
employers, still retain membership of their biological family
if they still live with them. Finally, people who live in
the same dwelling may not belong to the same family if they

592 do not share the same arrangements for preparing and consuming food.

621 59 [792] The 298 families living in Bangchan on May 23, 1953 may be grouped into five categories: (1) "One-person household" consisting of a lone man or woman /for ease in typological manipulation we arbitrarily consider this as a family, although strictly speaking a one-person household is not a family/: (2) "Nuclear family" consisting of a man and wife and their unmarried children; (3) "Limited extended family" consisting of a man and wife, either or both their sets of parents, and their unmarried children; (4) "Extended family" consisting of those included in "limited extended family" plus married children and children of the latter, plus any collateral relatives of any generation; and (5) "Ecclesiastical family" consisting of Buddhist priests, novices, and temple boys, all males, living together in the temple under the Headpriest's supervision. The distribution of these different types of families so defined is shown in Table 3.

592 596 621 Further explanation is perhaps necessary with respect to the "extended families" in Table 3. It must be pointed out that the term 'extended' is here used for the sole purpose of defining types of families which include dependent married couples as differentiated from the ordinary independent nuclear family. It will be seen in the next section, however, that there is no permanency in this inclusion of married couples whose intention is always to establish an independent family of their own. The so-called 'extended' family in

[TEXT CONTINUED ON PAGE 63]

TABLE 3

DISTRIBUTION OF TYPES OF FAMILY
Bangchan, Thailand, 1953

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[792]

Family Types	Frequency	Per Cent
One-person household	16	5.4
Nuclear family	177	59.4
Limited extended family	24	8.1
Extended family	80	26.8
Ecclesiastical family	1	0.3
Total	298	100.0

592 Bangchan is thus not a counterpart of the Indian or Chinese
596 extended family and should not be conceived as such. Its
621 outlook is definitely that of the nuclear family. Its
assumption of an extended family structure does not indicate
an intended role of the conventional extended family but
does rather demonstrate the inability, temporarily at least,
to provide for an establishment of a new family for the newly
[511] wed members. Most of the 80 'extended' families existing
in Bangchan at the time of the second census in 1953 cannot
be regarded as well to do, and some are extremely poor,
being families of the laboring group without any assured
regular income.

592 All of the sixteen one-man families were poor, rang-
621 ing from destitute old people who had been deserted by their
kin to small farm operators who had to make the most out of
their under-sized farms.

592 There were some 53 dependent relatives staying with
602 twenty-five families. These relatives do not include parents
621 of family heads and family heads' direct descendants and
[597] their spouses. They also do not include 'adopted' children
of family heads, who automatically become members of the
family. Records show that most dependent relatives remained
in the family only for a brief period of time. Seven relatives, however, were able during the period from 1949 to
1953 to assume the headship of the families of which they
had been dependent members.[7]

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[7] See section on change of family heads, Chapter II.

597 621 593 As of 1953 seven adopted children were reported to be living in Bangchan. Since only those mentioned by family heads as their adopted children were so recorded and since some of the information on family members were not given directly by the family heads, it is possible that there might be some more adopted children who appeared in the 1953 census as nephews or nieces. The authenticity of the term 'adopted child' as used in the village is nevertheless rather questionable. There has never been such a practice like legal registration of adopted children in the village, although this is provided by law. Moreover, maltreatment of an adopted child was not unheard of. In 1952 one family head reported that his adopted daughter had "run away" to Bangkok. In 1953 a young widow, an adopted daughter of an operator of a coffee shop in the village, also "ran away". When her whereabouts became known, no effort was made by the foster parents to return to the woman her golden necklace valued at one thousand baht. Later she was forced back home, being beaten all the way in spite of her complaint that she was pregnant. It was also not infrequent that an adopted child left his foster parents and took residence as a dependent relative in another family in the neighborhood. Such incidents points toward the possibility of 'adopted child' being used as a nom de grace for a prospective free family laborer.

162 592 621 Table 4 shows that with the exception of the ecclesiastical family the size of families in Bangchan ranges from one to fourteen, averaging 5.7 persons per family. This

[TEXT CONTINUED ON PAGE 66]

TABLE 4

DISTRIBUTION OF FAMILY SIZE
Bangchan, Thailand, 1953

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Family Size	Frequency	Per Cent
One-person family	16	5.4
Two-man family	18	6.0
Three-man family	34	11.4
Four-man family	35	11.7
Five-man family	43	14.4
Six-man family	48	16.1
Seven-man family	38	12.8
Eight-man family	26	8.7
Nine-man family	23	7.7
Ten-man family	10	3.4
Eleven-man family	1	0.3
Twelve-man family	2	0.7
Thirteen-man family	2	0.7
Fourteen-man family	1	0.3
[792] Forty-one-man family*	1	0.3
Total	298	100.0
Mean	5.7	
Median	6	

* Ecclesiastical family.

162 592 621 average size of family in 1953 is slightly larger than that calculated from the 1949 census.

Disappearance of Some Families from Bangchan

162 178 592 621 When the 1949 and 1953 censuses are paired hamlet by hamlet, appearance of new families and disappearance of some of the old families may be detected. Table 5 shows that during the four years between 1949 and 1953 forty-three families had disappeared from the lists of the seven hamlets constituting Bangchan. This loss was compensated by fifty-three new families, giving a net gain of ten families. In other words, of 288 families existing in 1949, 245 families remained throughout the period. When 53 new families were added to the continuing 245 families, a new total of 298 families was arrived at for 1953. A closer examination, however, will reveal that there were five families which disappeared from one hamlet only to appear in another hamlet of the same Bangchan village. If the seven hamlets are to be considered as one geographical unit, these five families should be deducted from both the disappeared and new families, giving a net disappearance of 38 families and a net appearance of 48 new families, while the number of continuing families becomes 250.

[166] Of 38 families which disappeared from Bangchan, 27 moved out to other villages nearby or afar, while 11 were disintegrated or simply annexed by other families in Bangchan itself.

[TEXT CONTINUED ON PAGE 68]

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T: Janlekha X-4,5 (1948-1953)1956 AOT Central Thai AOT Bangchan

TABLE 5

CHANGES IN NUMBER OF BANGCHAN FAMILIES FROM 1949 TO 1953

Hamlet	Number 1949	Number 1953	Continuing Total	Continuing (1)	Continuing (2)	Disappeared Total	Disappeared (1)	Disappeared (2)	Disappeared (3)	New Total	New (1)	New (2)	New (3)
BC4	43	40	32	32	0	11	6	0	5	8	3	1	4
BC5	27	28	24	18	6	3	2	1	0	4	1	0	3
BC6	44	47	38	36	2	6	4	0	2	9	4	1	4
KY5	54	63	45	40	5	9	6	1	2	18	13	2	3
KY6	28	31	27	26	1	1	0	1	0	4	0	1	3
KY7	43	42	37	33	4	6	5	1	0	5	3	0	2
KY8	49	47	42	36	6	7	4	1	2	5	3	0	2
Total	288	298	245	221	24	43	27	5	11	53	27	5	21

Explanation

Continuing (1) . . same family head
Continuing (2) . . different family head

Disappeared (1). . moved out of the village
Disappeared (2). . moved to other hamlet in the village
Disappeared (3). . disintegrated or annexed by other family

New (1). . . . . . moved into the village from other village
New (2). . . . . . moved in from other hamlet of the village
New (3). . . . . . separated from other family in the village.

592 178 621 Although disintegration and annexation of families have a common feature in that in either case the family loses its entity, they have different connotations as to how the family passes out of existence. In order to have a clear picture of the village economy it is necessary to make a distinction between these two dynamic processes. The best way, perhaps, is to study the eleven families individually.

592 178 621 511 Case 1: A poor laboring family of eleven lived in BC4. The family head was in 1949 an old man of 59, his wife an old woman of 64. The family also included a son, age 29, son's daughters, 16 and 10, son's son, 9, daughter, 35, daughter's son, 18, daughter's daughters, 11, 4 and 1. This was the situation when we were first acquainted with them. When we re-visited the village in 1952, however, we found that only two members remained -- A, the old woman now sick with malnutrition and almost immovable, and B, her granddaughter then age 14 and still in the primary school. Presumably the girl was taking care of her grandmother. Except for the clothes they were wearing and a small old shack which was about to collapse, they did not own anything. B said she worked on a three-fourth-rai parcel and did some fishing or vegetable gathering before and after school time. Actually, she did not get much out of that effort; for the rice crop, 30 tang of paddy or roughly 15 tang of clean rice, was barely enough for a few months' consumption, and fishing
178 would not be productive unless she had several long uninter-
592
621 rupted hours. In tracing what had happened to the rest of

178 592 621 the family members we were informed that A's daughter and her four children had moved out of the village separately to different places which could not be traced, while B's brother and sister went to live with a relative in Lam-loogga, also a rice growing village some fifteen miles to the north. The two chief bread winners of the family, A's husband and B's father, managed successfully to get themselves ordained and are now residing in the village temple. Early in 1953 B went to live with her relatives in Lam-loogga, leaving the sick old grandmother alone in Bangchan. [792] [888] The arrangement was that the old woman was to quit the old shack and take refuge in the secular part of the temple wher it would be possible for her ex-husband, now a priest, to have two meals delivered to her every day. Just before the 1953 census was taken, however, she was taken to Lam-loogga. The last member of the disintegrating family was thus left out of the 1953 census.

178 592 587 736 621 Case 2: After the death of his first wife, an old man in BC4 gave his two sons equal shares of his property. He then acquired a second wife and built a separate quarter apart from the main building, thus creating a new family of two. In 1952 he was fatally hit by a truck on the Minburi road. After a few months of unhappy stay with one of her step sons, the widow acquired a new husband and moved out to a neighboring village.

178 592 621 [166] Case 3: There was in BC4 a laboring family of three consisting of an old man, his daughter, and her son. After

178 the death of her father, it was reported that the woman
592 and her son moved to Bangplee, another rice growing village
621 some fifteen miles to the south. After checking with some
[166] of the former Bangchan residents who are now living in that village, the first report was found to be inaccurate. In fact no one in Bangchan seemed to know where they were. The only hint available to us concerning the mother and son was "Family disintegrated. Mother went one direction, son another direction."

Case 4: A woman and her adopted son were operating
[[illegible]] a 22-rai rice farm in BC6. After the death of the mother, the man remained in the village alone for a short time and then was conscripted into the army.

Case 5: After the death of the head of a laboring family in BC6, the wife and their four grownup children left the village separately. In the eyes of villagers this was
[166] another case of "family disintegration." The wife's birth place was in KY8, but she could not go back to her old family because there was not enough land to work.

Case 6: An old woman, age 76, was reported in the
[[illegible]] 1949 census to be living alone in KY5. Later she moved
[[illegible]] into the secular compartment of the temple (she was an aunt of the headpriest) where she died before the 1953 census was made.

Case 7: A man, age 50, was living in KY8 with his older sister, age 60, and their nephew's son, age 6. When the man died, the older sister pursued her brother's farm

178 laboring profession, limiting the work to transplanting only.
592 Apparently she did not earn enough. During this hard period
621 the young boy left her. The woman continued to live alone
for two years. After the collapse of her shack in 1953 she
went to live with a young couple in KY5 who are not related
to her. In exchange for room and board and a nominal allow-
ance, the old woman agreed to take care of the couple's baby.

178 Case 8: In 1949, a couple, both teachers in the Bang-
592 chan Primary School, were sharing the same dwelling with the
895 wife's mother's family, but having a seperate food arrange-
634 ment for themselves and their two young daughters. Thus,
621 they appeared in the 1949 census as a seperate family. In
local standard, the combined income of these two teachers
[46] was quite high. The family lived well and was the only
family in Bangchan that owned a camera. In the 1953 census
this family became a part of the wife's mother's family because they had arranged to share the same food. The reason that was given for this new arrangement was that some time earlier the wife's brother, who had been living with his mother, got married and moved out to start an independent family, whereupon the old lady suggested that her daughter move in to fill the vacancy.

178 Case 9: In 1949, a family of three, consisting of
592 a young couple and their six years old daughter, worked as
621 farm hands for the wife's mother for fixed pay on which they
[573] were able to live independently. Two or three years later,
the wife's mother asked this family to move into her househol

178 because four members of her family had just left her to
592 establish families of their own. The son-in-law accepted
621 this invitation and had since taken over the management of
[592] his mother-in-law's large 60-rai rice farm.

Case 10: In 1949, an old woman was living with two
boys, one distantly related to her, the other without any
[427] blood relationship. She was operating a small rented rice
[792] farm. Some time in the past she had made a generous offer
[431] of her own house to the temple which was not acted upon by
the receiving party. In 1953, the headpriest contemplated
an expansion of one of the temple buildings and approached
the woman for the gift. The woman complied with the request,
had her house dismantled, saving only the kitchen, and sent
all the building materials to the temple. Meanwhile, the
two boys had left her; one went to live with his mother in
[593] the village, the other went to Bangkok. Later, the woman
[433] joined the household of her younger brother, who lived next
door, with the understanding that the brother had free use
of her buffalo in exchange for her room and board.

Case 11: In 1949, a woman was living in KYB with
her aged mother and her baby born of her separated husband
[586] who was a policeman. Two years later, the woman married a
[539] widower, who lived in the same hamlet, and brought along
her mother and son to live with her new husband.

With the exception of Case 6, a lone aged woman who was survived by none after her death, these cases may be grouped according to the nature of acceptance of the families

178 to which surviving elements of the disappearing families
592 were subsequently attached. It was noticed that in the
621 last four cases -- Cases 8, 9, 10, and 11 -- merging with new families was arranged on the basis of mutual convenience and the disappearing families moved en masse into the new ones (with the exception of Case 10 -- a lone woman when arrangement for merging was being made). It may even be said that the initiative came from the receiving families, although the new members may have been more anxious for the union. In the remaining six cases -- Cases 1, 2, 3, 4, 5, and 7 -- there was no element of mutual convenience, and the surviving elements of the disappearing families did not move into new families as a body but as an individual. It seemed in these latter cases that the force of circumstances -- death or extreme poverty -- had prompted either party, usually the disintegrating elements, to seek the union as a quick way out. Because of the purposive nature of the arrangement in the former cases, the process may be called 'annexation'; while for want of a proper term, the process seen among the latter cases will be called 'disintegration'.

[162] None of the eleven cases undergoing disintegration
[423] or annexation owned landed property. Table 6 shows that
[464] six of these were farm laboring families. The five others were distributed among the following occupational groups: farm operator, public servant, and no occupation.

[166] Among the 27 families that moved out of Bangchan, eleven families were known to be living in the bordering

[TEXT CONTINUED ON PAGE 75]

TABLE 6

DISINTEGRATION AND ANNEXATION OF FAMILIES
Bangchan, Thailand, 1949-53

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Case	Occupation	Landed Property	Immediate Cause	Number of Surviving Elements	Number of Attached Families
Disintegration:					
1.	F. laborer	no	poverty	11	4
2.	Public servant	no	death	1	1
3.	F. laborer	no	death	2	2
4.	F. operator	no	death	1	1
5.	F. laborer	no	death	5	3
6.	no occupation	no	death	0	0
7.	F. laborer	no	death	2	2
Annexation:					
8.	Public servant	no	convenience	4	1
9.	F. laborer	no	convenience	3	1
10.	F. operator	no	convenience	1	1
11.	F. laborer	no	marriage	3	1

178 592 621 166 villages, and six in villages within a distance of from four to fifteen miles from Bangchan. These seventeen families, whose locations were known, were engaged at the time of the study in the same occupations they had been when they were in Bangchan -- either farm operating or farm laboring. Our investigation, however, covered only the whole family as a unit -- that is, we cannot say that every single individual constituting these seventeen families when they moved out of [464] Bangchan was doing farm work in his new location. Only one case was known in which the family head got a permanent job as a janitor in Wat Makasan Primary School in Bangkok. This man was nevertheless commuting regularly between his farm home in Bangplee and his office in the suburb of Bangkok. His taking up a new job was thus a question of an individual member, not of the family as a whole.

It is not likely that the ten families whose locations were not known to us would take up new occupations in Bangkok. If they did work in Bangkok, they should pay some visits to Bangchan at least during festival time or family re-union occasioned by ordination or cremation, and their presence in the village would certainly be known to us. Besides, we were in constant contact with the core of a group of young men who went to work in Bangkok and who knew one another's whereabouts fairly well, and no information about these ten families was available from this source either. Our impression was that they were doing farm work in some villages not too close to Bangchan.

Appearance of New Families in Bangchan

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In the pairing of the 1949 and 1953 censuses against each other the appearance of new families was detected as was the disappearance of some of the old families which has just been discussed. Table 5 shows that there were 53 new families, but five of these were merely cases of reappearance of existing families from other hamlets of the same village. Actually, therefore, there were only 48 families that were really new in Bangchan.

Of these 48 new families, 27 moved into the village from the outside and 21 evolved from existing families in Bangchan. Of the 27 immigrating families, 18 came from the bordering villages and 9 from distant villages in all directions ranging from Lardprao and Samsen, some ten miles to the southwest, to Prachin, over a hundred miles to the east.
3] While the eighteen families from the bordering were accustomed, as expected, to rice growing, not all of the nine families from distant villages had been farmers. A family head of one of these nine families came from a family of fruit growers, while another family head, who apparently had a more spectacular record, had been engaged in international rice trading. This latter man, who knew some English, had worked in a large rice mill in Nonburi which was exporting rice under strict government control after the war. Discovery by the government agent of irregularities of the firm led to the man's flight abroad to Hongkong or Swatow some eight years ago. It is assumed with his

178 appearance in the village that the case has been closed.
592 One reason he chose to take up residence in Bangchan after
621 business failure in Bangkok was that his wife owned through
166 inheritance a 17-rai parcel of rice land in the village.
Another equally important reason was the relatively low cost of living in the village as compared to the city, which could not be overlooked especially when he had a large family of ten.

162 Of the 21 families evolving or separating from
178 existing families in Bangchan during the period from 1949
592 to 1953, sixteen were young married couples seeking inde-
591 pendent families of their own. Eight of these were married
621 before 1949, and the rest after that year. These sixteen
young couples altogether contributed, in the 1953 census, 21 children of age-group 0-4 years or about ten percent of all children of that age-group in the whole village.

This process of separation of young married couples from the old families is normal, in fact a characteristic feature, in areas where the nuclear family system predominates. Although some newly wed couples were able to establish independent families immediately, the pattern was that they remained for a year or more with family of either side, during which time they accumulated capital necessary for future establishment. A separate section will be devoted to this important feature of the village economy.

178 In contrast to the above normal separation from old
592 families, the remaining five of the 21 families underwent
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178 592 621 different types of separation which will be described individually as follows:

Case 1: This involved the two sons who inherited landed property from his father described in Case 2 for the disintegration of the family, and in fact this was the first Bangchan family we met in 1948. At that time the elder brother, then age 37, was a widower and was courting a woman in another village along the Minburi Road. His work in road construction and maintenance (the Minburi Road) gave him a good excuse for continued absence from home, leaving his two daughters and three sons under the care of his younger [527] [464] brother who was the family head. Just before the 1949 census was made, he married the woman and once again became settled down. Meanwhile the younger brother got a job in road construction. With regular monthly cash income, he took to drinking and established himself as one among the few notorious dipsomaniacs in the village. This was intolerable to the elder brother who finally moved his nuclear family out to their new home just across the road.

Case 2: In 1949, an unmarried woman was living in an 'extended' family headed by a son of her elder sister. The combined landed property of the family was 67 rai of rice land, 40 rai of which was a share of the woman and her aged mother who was also living in the family. Some time before the 1953 census was made the woman and her mother moved out to form a separate household. The reason for the separation was not quite clear. It was assumed, however,

178 that these two women were happier living by themselves than
592 with their junior relatives.

621

Case 3: A married couple were living in 1949 with
[586] the wife's parents. They were later separated, the husband
leaving his former wife with her parents. In the 1953 census
the man appeared in KY7 list as head of a one-person household.

Case 4: In 1949, a woman appeared in the census as wife of a family head in KY6. In that same year she left him and lived as wife with another man in KY8. A few years after, she left this second man again. She then appeared in the 1953 census as family head of a family of six including her three children and her aged parents.

Case 5: In 1949, a man of 47 was head of a laboring
family of nine in KY, including his wife, three adult off-
[444] spring and four young children. Later in that year he left
[586] the family and hired himself out as a regular laborer to a
farm operator with whom he worked for two years. He then left the village for a year after which he returned to work as regular hired laborer for another operator for almost a year and a half. In the 1953 census he appeared as head of a one-person household in KY6. Our records show that he was a diligent worker, excellent fisherman, averse to sweet cookies, but very fond of liquor. When asked why he did not go back to his family in KY8, he replied "The larger the family you have, the more trouble you get. I have more fun living alone."

178 592 621 These five cases may be grouped as follows: two cases of relatives of family heads separating from 'extended' families, two cases of one spouse leaving the other, and one case of a family head deserting his wife and children.

Pattern of Establishment of New Families

593 592 Bangchan offspring customarily continued to live with their parents as long as they were not married regardless of how old they might be. In the eyes of the parents, an offspring is always their child, immature and needing parental supervision, as long as he has not been able to acquire a spouse; and until then the parents-offspring mutual obligations, necessitating living together, must continue to exist. Thus, it was not uncommon to see several unmarried adults crowding in one family providing too large a labor force relative to a small parcel of land on which the family [581] worked. In this context, marriage serves an important economic function of giving impetus to the start of new producing units in the village. There is no corresponding service in areas where the extended family system predominates such as in China and India.

583 Two distinct kinds of marriage were conceived of in Bangchan: the conventional marriage with the sanction of parents or guardians of both parties which was usually preceded by formal arrangement and accompanied by marriage rites sponsored by the bride's family; and the popular marriage by mutual understanding between the man and wife without

583 the sanction of parents or guardians of either party. The latter case took the form of elopement -- the man taking the woman away from her family usually during the night and returning for pardon (normally granted) a few days afterward.
587 Another intermediate type of marriage was common among independent family heads, usually widows and widowers, in which case the man and woman simply came to live with each other. Marriage between widows and widowers who had been living in their respective families as dependent members also took this simplified form.
583 Finally there was also marriage by capture, one case of which was reported during 1949-53 when a daughter of a laboring family in BC4 was kidnapped by a group of men who were allegedly helping a friend of theirs take the woman as his wife. Although this dramatic kind of marriage by capture was often spoken of, actually it rarely happened in the village. Even in the single case just mentioned, there was doubt on the part of fellow villagers that the victim was really ignorant of the plan.

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In our records of major expenses of 96 families of farm operators[8] during the period from 1949 to 1953, three families reported expenses for conventional marriages. These expenses were for 1700, 6200, 7500 and 7500 baht for four sons which were dowries, in gold and cash. They were handed over to the brides' parents on the wedding day. Another family reported an expense of 5,300 baht for the marriage

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[8] See Chapter 6 as to how sampling for these 96 families was done.

583 of their adopted daughter, of which some 300 baht went to
585 bedding materials and 5,000 baht to the wedding feast which
435 the bride's parents alone were supposed to give. It should be noted, however, that in this last case the bride's parents received as dowry from the bridegroom's parents 4,000 baht in cash and two baht[9] weight of gold worth about a thousand baht, and they also received from the guests an aggregate customary contribution of 2,380 baht. Thus, the bride's parents came out with a net gain of 1,080 baht plus the gold which was to be given to the bride.

583 While the conventional marriage was somewhat costly especially for the bridegroom's party, the popular marriage by elopement was much less expensive. Our records show that in addition to nominal ceremonial materials of white cloth, candles and incense, the bridegroom had to pay a fine of only a few hundred baht to his wife's parents when the couple came to receive formal forgiveness from them.

We do not have comparative figures for the occurrence of conventional marriage and elopement, but the latter appeared very frequently in our daily field notes as against very few cases of the former.

591 There are two types of establishment of new families
184 after marriage: (a) immediately after marriage, and (b) some years after staying with parents of either party.

It was observed that immediate establishment of new families after marriage was common among couples originating from farm laboring families and families of poor farm operators.

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[804] [9] One baht weight is equivalent to fifteen grams.

591 184 A probable explanation was that the poor had nothing to gain from staying for a few years with parents after marriage. More important still was that with limited working land, presumably rented, the parents also did not get any economic benefit from the couple, whose stay with the family meant extra mouths to feed rather than extra hands to work.

Immediate establishment of new families was also observed in some couples originating from well-to-do families. This was nevertheless rare, because in the present economic condition it was rather difficult to find families rich enough to provide for the immediate establishment of a new family. The general pattern, then, was to let the couple accumulate for themselves while getting the benefit of free board and lodging from the parents. This period of stay with the parents with the intention for accumulation for future establishment may be called the 'nascent period'.

591 178 184 Table 7 shows that 30 out of 96 families of farm operators covered by the study were able to establish their nuclear families immediately after marriage. When these 96 farm operators were grouped according to their dates of marriage to the present spouses or last spouses in cases of widowers and widows, the distribution was as follows: those married during the absolute monarchy regime (up to 1932), 54; those married during the democratic regime (after 1932), 37; never married, 4; date of marriage not available, 1. Since 20 out of the 30 families which were able to establish themselves immediately were in the first group, the

[TEXT CONTINUED ON PAGE 85]

TABLE 7

FREQUENCY DISTRIBUTION OF LENGTH OF NASCENT PERIOD OF 96 SAMPLE-FAMILIES
Bangchan, Thailand, 1953

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Length in Years	Frequency
0	30
1	16
2	9
3	4
4	4
5	5
6	2
7	0
8	1
9	3
10	2
11-15	3
16-20	1
Not separate*	15
No information	1
Total	96

* These 15 families existed earlier as minor components of the old families. Headship of each family was later assumed by the present family head.

591 proportion for immediate establishment was 20 out of 54 or
184 37 per cent for those married before 1932, and 10 out of
178 37 or only 27 per cent for those married after 1932. A declining trend was thus observed of the ability to establish a new family immediately after marriage.

591 Table 7 also shows that the 'nascent' period of 50
592 families (that had ones) ranged from one to twenty years,
184 averaging four years, the mode being one year, and the median
178 two years. Among the fifteen non-separating families, eight headships were taken over by offspring while one or both of the parents were still alive (we shall call this 'type A'), four headships were taken over by offspring through the death of parents (we shall call this 'type B'), and three headships were taken over by spouses ('type C'). The last mentioned changing over of family headship (type C) occurred in three ways: through marriage of a man to a female head of a family whereby the husband automatically became the family head, death of the husband, and desertion of the husband.

591 The changing over of the family headship of the type
592 B in Table 7 was a natural process of inheritance. In type
184 A, it was found that senility accounted for seven out of
428 eight cases of the changing over, the one exception being
587 the case of a widower who wanted to have a second wife and who thought that the family assets originally belonged to his first wife's biological family and therefore an outside woman should not lay a hand on the 300,000 baht property.

591 A factor that should also be taken into account was that he
592 had a regular income of 450 baht a month from his job in the
434 Highways Department, which by the village standard was more
than enough for him to live comfortably with his second wife.

591 Historical records of the 96 farm operating families do not contain information as to how the 50 families passing through nascent period were divided into those staying with wives' families and those staying with husbands' families. The 1953 census, however, reveals that of 48 married couples then living in 42 families of parents of either side (four such families included two couples and one family three couples), 23 were with husbands' parents and 25 with wives' parents. The proportion may thus be estimated at about one to one.

59 During the nascent period, the couple ordinarily
434 received from the parents they were staying with a kind of
[431] annual bonus locally called lampai which varied according
to the economic status as well as generosity of the parents. Lampai took several different forms. Thus, a couple might receive all the paddy harvested from a specified area of the field of three, five, or ten rai; they might be given a fixed quantity of the crop -- say 50 or 100 tang; they might receive cash -- say 500 baht or any other varying amount. In some cases, the couple were expected to earn their lampai outside the family farm after obligation to family work had been fulfilled. This took the form of piece-working or trivial trade.
59 [431] If no lampai was given, the parents might give some gold in

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[431]

the form of a necklace as a token of appreciation. During this time, no matter how old they were, the couple should ask permission before going out or at least let the parents know where and why they wanted to go, and they were expected to help without having to be asked to in the family's field and in general housework.

Opinions of the villagers themselves on the advantages and disadvantages of the nascent period varied. On the one hand, staying with parents was viewed as a prolongation of a morally compulsory service to the old family which was economically disadvantageous to the newly wed couple. This was implicit in the following statement made by one villager concerning the length of the nascent period.

> There are many factors which determine the length of the nascent period:
>
> 1. Availability of family labor. If younger siblings are old enough to help the parents, the couple will spend only a short time with the old family.
> 2. Greed on the part of the couple. They want to have a share of the product of their labor. If they stay with parents, they are not supposed to get any unless the parents are willing to give it to them. They think, 'If we have a child, what would we have for him?' So they try to move out as soon as possible.
> 3. Lack of self-confidence on the part of the couple. This leads to a prolonged stay. Even when younger siblings are old enough to help the parents, the couple still may feel more secure to stay with the parents, for they do not want to take care of themselves.
> 4. Pride. Nang A married Nai B and continued to live with her parents. One day A was criticized for being sharp (she was accused of keeping part of the crop for her own). So A and B got together and planned to move out with the intention of building

59 themselves up ; financially to compete with A's parents.

The same informant said further, however, that usually it was up to the couple themselves to decide when to leave the old family. Parents, in his words, "rarely drive the offspring out. They also rarely resist the couple's decision to leave. The most they can do in case labor is badly needed is to ask the couple to stay a year or two longer."

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494 On the other hand, a second informant, a headman as was the first, indicated that the five-year period he and his wife spent with his wife's parents immediately after their marriage in 1922 was their most prosperous time. As
[431] lampai the couple were given the harvest from a 5-rai parcel each year. When he married, he already had five baht weight
[426] of gold. With surplus income, he was engaged in lending for interest. Accumulation during their five years' stay with the parents included timber enough to construct the new home when they moved out, one hundred tang of paddy, and forty baht weight of gold.

As a matter of fact, there are several factors that should be taken into consideration in evaluating the advantages and disadvantages of a newly wed couple undergoing the nascent period. These are the lampai arrangement, willingness of the parents to let the couple earn extra income from sources outside the family, current wage rate and job opportunity, and, most important, the current profitability of the farming business which is assumed to be the alternative

591 if the couple do not choose to stay with the parents. In
434 any event, the fact that the couple are more or less free to leave the old family provides an opportunity for the couple to escape all the disadvantages that might be imposed upon them, leaving all the advantages to be acquired.[10] As for those who apparently discounted the merit of the nascent period, the author suspects that they neglected to consider the expected net income from farming and that they were unrealistic in thinking only of wage rate and in underestimating the more crucial problem of job opportunity.

59 In addition to their own wealth accumulated during
431 the nascent period, gifts in the form of farm equipment,
434 paddy and land were usually given to the couple by their parents at the time they left them to establish an independent family. Of 80 separating families (Table 7), however, 17 reported that they received nothing whatsoever from their parents. Among the remaining 63 families that received something, there was a wide variation in the kind and the amount of the gift, ranging from a single buffalo with an incomplete set of farm equipment to 228 rai of rice land with a complete set of farm equipment as well as a stock of paddy to last the new family until the coming harvest. Parental gifts to newly established families are shown in Table 8.

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[10] At least two cases were known where the couples, not ready to start a family of their own, left the old families and moved into families of the other spouses.

[TEXT CONTINUED ON PAGE 91]

TABLE 8

PARENTAL GIFTS TO 63 NEWLY ESTABLISHED FAMILIES
Bangchan, Thailand, 1909-48

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Items	Number of Families Receiving	Range of Individual Gift	Total	Average for Those Receiving
F. implement*	63	1 set	63 sets	1 set
Buffalo	47	1-4 heads	73 heads	1.5 heads
Land	37	6-228 rai	1112 rai	30 rai
Paddy stock	32	40-1000 tang	4495 tang	140 tang
Building	12	1-2 bldg.	16 bldg.	1.3 bldg.
Cash	4	80-400 baht	760 baht	190 baht
Boat	3	1 boat	3 boats	1 boat
Gold	2	2-20 baht**	22 baht**	11 baht**

* Only basic items were included -- plow, harrow, sickle, etc.

** One baht weight of gold is equivalent to fifteen grams.

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415 There was one item of parental gifts which is not shown in Table 8 -- the household equipment. Two of the 63 families reported that they received a complete set of kitchen utensils, and two included jars in their gift lists. After checking the result of this survey with some informants, however, many admitted that they did not include these kitchen utensils in the list because they were obvious items. Nevertheless, there was no basis on which it could be inferred that every newly established family received a set of the kitchen utensils. It was therefore decided to omit the household equipment from the table.

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423 Another form of parental gifts was the practice, if the parents had enough land to spare, of letting the couple work on some ten or twenty rai free of charge for the first two years. Rent might be charged after that, but there were also cases in which the couples continue to work on the parcel without paying any rent to their parents and finally took it for granted that the parcels belonged to them.

Economic Significance of the Family

59 Much space has been devoted to discussion of the family because of its significant role as the only organized producing unit in the village economy. Another important function of the family was mentioned in previous sections -- through privileges extended to the majority of newly wed couples during the nascent period, the old family facilitated

59 the establishment of a new family, virtually a new farm. It must be noted in this connection, however, that not all new families started out with financial resources. There are circumstances like incongenial relationship between the dependent couple and their parents or other members of the family, tight financial situation of the old family, or extreme optimism on the part of the young couple themselves that brought about premature fission.

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433 The role of the family becomes more outstanding when the following features of rice farming are considered:
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1. In Bangchan, as elsewhere in the rice producing areas of Thailand, a farm means rice land available for the family to till because farm income depends more on rice acreage than anything else.

2. An operator is generally not in a position to reallocate his resources in order to obtain higher income. Usually he does not, for example, put in more labor to get a better crop, for crop under existing technology would not increase with more labor than normally used. He does not put in fertilizer, for it is not certain, in his thinking, that profit is assured in so doing. He does try to improve his rice strains for greater yield, however.

[464] 3. The only way to increase income from rice with no change in technology (other than improving strains), then, is to increase acreage utilizing the same amount of family labor. This is the case, as we shall see in a later chapter on farm organization and management, because of the existing under-employment of family labor.

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[429]

4. The operator may increase his acreage by renting in more rice land. It is highly improbable that the extra parcel would be one adjacent to the old parcels. This involves extra cost of irrigation and drainage and a buffalo shed. Yet the most important problem is how to lay a hand on the extra parcel, since the practice of most landowners is to rent their land out to their former tenants. When all cultivated land in the village has been tilled, an extra parcel to one naturally means a reduction of the same to another.

5. With limited land which has no prospect of intensification as far as rice production is concerned, the size of the family becomes the limiting factor of the level of living. This is rendered more acute by the customary practice of offspring continuing to live with their parents regardless of their age. When they get married, either spouse's parents are likely to suffer another mouth to feed, and in many cases the babies that will eventually arrive.

It is seen, then, that discussion of rice farming which is the core of the village economy cannot be separated from the context of the family.

CHAPTER III

COMMUNITY ECONOMY

Occupational Structure in Bangchan

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At the completion of the 1949 census, by which time we had spent nine months in the village, we categorized Bangchan's 288 families primarily on the basis of the principal source of income of the family head. Though the categories derived suffered from some overlapping and ambiguity, we found them useful for survey and other purposes. The descriptions of each occupational category, as found in Tables 9, 10 and 11, appear on pages 111 through 113 of the primary report.[1] As they will be constantly referred to, they will be summarized here:

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1. Farm operator. Main income from growing rice on his own or rented land.

2. Farm laborer. Main income from working on local farm operators' farms, as regularly hired laborer for an entire rice season or at casual farm jobs for which wages are contracted on the basis of piece-work or days worked, for example, transplanting or harvesting rice, digging ditches, or deepening fish pools. Some families in this category supplement their real income with rice which they cultivate

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[1] Sharp, Hauck, Janlekha, and Textor, op. cit., pp. 111-13.

[TEXT CONTINUED ON PAGE 98]

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TABLE 9

OCCUPATIONAL DISTRIBUTION BY FAMILY
Bangchan, Thailand, 1949*

Occupation	BC4	BC5	BC6	KY5	KY6	KY7	KY8	Total
F. operators	25	25	38	37	25	37	42	229
F. laborers	7	1	2	10	1	-	6	27
Traders	1	-	2	1	-	2	1	7
Investors	3	-	1	-	-	-	-	4
Professional	2	-	-	1	-	-	-	3
Public servants	2	-	-	3	-	-	-	5
Home enterprisers	2	-	-	-	1	1	-	4
Priest or novice	-	-	-	1	-	-	-	1
Miscellaneous	1	1	1	1	1	3	-	8
Total	43	27	44	54	28	43	49	288

* Some figures in this table differ slightly from those reported on pages 114-5 of the preliminary study (Sharp, Hauck, Janlekha and Textor, Siamese Rice Village) because errors such as duplications and omissions in the original census have been detected and corrected.

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TABLE 10

OCCUPATIONAL DISTRIBUTION BY FAMILY
Bangchan, Thailand, 1953

Occupation	BC4	BC5	BC6	KY5	KY6	KY7	KY8	Total
F. operators	26	19	33	42	28	31	37	216
F. laborers	6	3	8	7	2	5	7	38
Traders	4	4	2	6	1	2	2	21
Investors	2	1	-	1	-	1	-	5
Professional	1	-	-	-	-	-	-	1
Public servants	-	-	2	4	-	1	-	7
Home enterprisers	-	-	1	-	-	-	-	1
Priest or novice	-	-	-	1	-	-	-	1
Miscellaneous	1	1	1	2	-	2	1	8
Total	40	28	47	63	31	42	47	298

TABLE 11

CHANGES IN OCCUPATIONAL STRUCTURE
Bangchan, Thailand, 1949-53

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Occupation	Distribution				
	Actual		Per Cent		
	1949	1953	1949	1953	Changes
Farm operators	229	216	80	72	-8
Farm laborers	27	38	9	13	+4
Traders	7	21	2	7	+5
Investors	4	5	1	2	+1
Professional	3	1	1	+	-1
Public servants	5	7	2	2	
Home enterprisers	4	1	1	+	-1
Priest or novice	1	1	+	+	
Miscellaneous	8	8	3	3	
Total	288	298	100	100	

*243
434 463 on a small plot that they own or rent, but all families in this category derive their main income from wages.

3. Trader. Main income from the more or less regular sale, not production, of rather considerable amounts of goods. Perhaps somewhat arbitrarily, we have not included in this category those very few families who derive their main income from production of cookies or the like, even though such families might themselves perform the selling of their products to local consumers; such families are included in the 'home enterpriser' category below.

[426] [427] 4. Investor. Main income from land rent, interest on loans, and/or speculative gain.

5. Professional. Main income from such specialties as midwifery or dramatic entertainment.

434 647 463 6. Public servant. Main income from, or majority of working time spent in, government employment. This is the only category in which we had to add the additional criterion of "majority of working time"; government pay is rather low, and one person who works full time in the employ of the government actually receives more income from other sources. [875] [622] This category includes regular government officials, teachers and school janitors. The hamlet headmen are not included, however, as their main incomes are otherwise derived and their remuneration from the government is extremely low. They maintain no daily routine as public servants. The headmen are all farm operators, except one who is an investor.

434 7. Home enterprises. Main income from food or handi-
463 craft articles produced at home.

434 8. Priest or novice. Though priests and novices do
792 not receive salaries or wages, their maintenance, which comes
463 from the temple and directly from the people in the form of
contributions, is their main income. This category includes only permanent priests and novice personnel. Excluded here are all residents who enter the priesthood more or less perfunctorily for just a few months. Since sexual abstinence is demanded of all monastic personnel, no wives or offspring are found in this category.

434 9. Miscellaneous. The main income source for the eight families in this category is obscure. The heads of these families are not known to have any steady occupations.

178 Table 9 shows the occupational distribution of
463 Bangchan families as of 1949. It may be observed that some
621 of the figures in this table differ slightly from those
reported in the preliminary study previously cited. This is because errors such as duplications and omissions in the original census have been detected and corrected.

Table 10 shows the same distribution as of 1953, and Table 11 the change in the occupational structure of the village that took place during the four intervening years. In 1949, 80 per cent of Bangchan families were farm operators. Four years later, the figure was reduced to 73 per cent. While there was no percentage change in the figures for public servants, miscellaneous, and priest or

178 novice; there was noticeable increases in those for farm
463 laborers and traders, and a slight increase in that for
621 investors, which were offset by a marked decrease in figures
for farm operators and slight drops in those for the professional and home enterprisers. In order to understand these changes in the occupational structure of the village, more information on some of these occupation than that given in our operational definitions at the beginning of this chapter is necessary.

*243 Farm operation is a traditional way of life in the
434 village. The primary motive is to secure enough rice for
463 consumption. A secondary motive is to have cash from sale
of surplus rice to buy goods that are not produced locally.

*243 Farm laboring as a profession is limited to the poor.
464 Farm laborers, occupying the lowest status in the village,
554 are the most unstable and socially disintegrated group.
621 They are not fully employed even during the work seasons
463
of the year because there are too many of them in the locality. Thus, they exist in the village not because of demand for their work but because they have no opportunity for other occupations.

621 There were twenty-one families that were classified
463 as traders in 1953. Of these, nine were permanent store-
443 keepers, and twelve were peddlers selling food stuffs from
door to door. Stores were situated at strategic places in the village -- two at the crossing of Minburi Road and Bangchan Canal which is the natural entrance into the village,

621 463 443 four in the immediate neighborhood of the temple or on the temple ground itself, and three on the banks of up-canal Bangchan. These stores varied in the size of business but the goods sold were almost identical. To be found in each store were inexpensive articles of daily use, mostly dry foods, cookies, tobacco, betel, areca, lime, toilet articles, matches, kerosene, and farm materials like ropes. Most of these stores also sold hot coffee, soft drinks, and liquor. It should be noted in this connection that the market town is only two miles away. This nearness to a large market adversely affects the nature and volume of business of local traders in two ways -- villagers bypass local stores and go to the market town for varieties and large purchase, and the village is daily invaded by a number of peddlers from the town selling perishable foods.

443 463 While local stores operated the whole year round, the activities of twelve other trader families classified as peddlers were highly seasonal subject to local water condition, seasonal demand for purchased food, seasonal supply of cash, and alternative income on the part of the peddlers themselves. These peddlers sold small quantities of vegetables, fruit, and the cheap salt water platoo fish (Rastrelliger chrysozonus), receiving in exchange from buyers cash, [426] eggs, or paddy. Extension of credit was necessary for villagers did not have cash especially during the period from July to November. The following passages in the author's daily note dated January 12, 1953 gives an idea as to how

443 peddling was conducted by a local resident of Bangchan.

"With a capital of 600 baht Nang A began to engage
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43 in peddling on December 4, 1952. The first day she spent 150 baht on goods, mostly vegetables which she bought from Minburi. She made two rounds that day. At the end of the morning round she got 25 baht cash and 150 baht on credit. The rest of the vegetables were sold out in the afternoon round in which she received 8.50 baht cash and 29 baht on credit. This was the only time she bought goods from Minburi. From then on she took the 5 a.m. bus to Bangkok and returned to Bangchan with the goods about noon.

"Later she also dealt in pork, and her daily outlay rose to 220 baht. Out of this, she received 150 baht cash and 150 baht on credit. To date her credit accounts total 750 baht. Yesterday she was able to collect 150 baht cash and six tang of paddy (worth 54 baht) from her debtors. She said she expected to do the peddling for fifteen more days, after which the water level would be too low. She would then quit and start the same business next rice year, but she intended to start as early as the transplanting season (August-September).

"She took 200-300 chicken eggs to Bangkok every day. She sold these at a wholesale price of 55 satang each. Sometimes she sold them direct to Bangkok coffee shops and got a higher price of 65 satang a piece. 'If you are a peddler,'
443 she said, 'you must also deal in eggs.' She took time off today because 'shrimps are plentiful' in the canal. Besides,

443 she wanted to spend more time collecting debts."

221 It should be noted that A's brief duration of peddling
433 started in the harvesting season. During this time the
434 village cash supply was high, resulting in demand for such
443 a delicacy as pork which normally constituted a negligible
261 fraction of the diet of Bangchan people. This is a good
262 business period for the peddlers. Another good business period, although not as good as the harvesting time, is in the transplanting season, when farmers are too busy to procure their own food (by fishing). In this latter period, farmers are not particular about food, and "anything eatable sells, provided liberal credit is allowed" for people have neither time nor money.

443 It should be noted also that many smaller peddlers did not go to Bangkok as did Nang A. The small peddlers, who operated on a very limited working capital, had to sell their eggs to larger peddlers at discounted prices. Our records show that only three or four peddlers took regular trips to Bangkok.

427 Five families were classified as investors in 1953.
434 All these families lived on rents from land, interest on
454 loans, and income from speculative sources such as buying
621 paddy when the price was low and selling it at high prices.
463 Actually, most of these five families were not among large
426 land owners in the village. Their combined land was only 134 rai, averaging only 27 rai per family and ranging from 10 to 76 rai. This is a small acreage in comparison to

427 the combined land of five leading farm operators of 693
434 rai, averaging 139 rai per operator and ranging from 83
454 to 235 rai. It must be remembered that our operational
621 definition of occupations was based on the main source of
463 426 income and that many of the villagers had more than one
source of income. Investors as an occupational class in Bangchan should not be pictured as large landlords and large money lenders, possessing financial influences over their tenants and debtors. Rather, they were humble fellow villagers whose incomes were mainly derived from rents of small parcels of land or interest on small loans. To cite an extreme case, one aged woman was classified as an investor. She had only 17 rai which she rented out to her own son. She was living alone in an old shack and was too old to do any kind of work. She received as rent about a hundred tang of paddy a year which is equivalent to an annual income of only 800 baht. Thus she was considered one among the poor in the village.

178 There were three families whose occupations were
463 classified as professional in 1949. The number was reduced
621 to one in 1953. The head of this family was a Chinese car-
322 penter who derived his income primarily from boat building.
Again, it must be pointed out that reduction of the number of families primarily engaged in professional services does not mean that professional services had been declining.
[305] On the contrary, they had been increasing. There were three barbers in 1953 as against only one in 1949. More traditional

178 doctors were practicing in 1953 than in 1949, while there
463 was no change in the number of midwives. In most cases,
621 however, these professional services had ceased to be the
main sources of income of the families engaging in them.

621
434 In 1953, occupation defined as public service in-
463 cluded the jobs of an educational supervisor, one teacher,
647 two school janitors, two workers in the government-owned
[875] Bangkok Wharf, and one policeman. Actually, there were five Bangchan residents who were teaching in 1953. Only one of these, however, was a family head. Two of the other four teachers were husband and wife living with the wife's mother who was classified as an investor -- the most prosperous of the investors mentioned earlier in this section. Another teacher, a wife, was also living with her mother who was also an investor. The last teacher, also a wife, was living independently with her husband who was operating a rice farm, and the occupation of the family was thus classified as farm operating. With the possible exception of the policeman, all these public servants were well paid in the village standard, ranging from some four hundred baht a month for a janitor to eight hundred baht for the educational supervisor. After the 1953 census was taken, more regular jobs were opened to Bangchan residents by the Highways Department, and also more people took up regular jobs of a public service nature in Bangkok while retaining residence in Bangchan by commuting daily between the village and their offices. Thus,
[178] although the percentage figures remain constant during

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434 1949-53, in actuality public service as an occupation is
463 increasing in Bangchan.

621
647 There were four home enterprisers in 1949, mostly
engaged in making cookies. As in case of the professional,
434 this activity still existed in Bangchan, but by 1953 it had
443 degenerated into a secondary income, leaving the lone case
463 621 of basket making in the home enterprise category.

285 Only one family head was classified in 1953 as a home-enterpriser. The family was engaged in making takraw -- a cane utensil used in picking mangoes from the tree. On January 27, 1953 we met A, the head of this family, who was taking 103 takraws of various sizes to sell in Bangkok.
[435] A gave the amounts and prices of these takraws as follows: 56 large size, @ 3.00 baht; 31 medium size, @ 2.50 baht; 16 small size, @ 2.00 baht. A said he and his wife worked on these 103 takraws alone, and finished them in twelve days, using 50 baht worth of materials including cane, wood, and binders. Ordinarily, they started making takraws in December and continued through May. They were able to make about 3,000 baht within this period. They also made other things like baskets, but takraws were their main source of income. In rice growing season, they also did some piece working. They did not operate a farm. Piece working and basketry during rice growing season brought them a combined income of about 2,000 baht. The amount of each kind of
621 basketry they made was not as constant as takraws. It de-
434
463 pended more on which paid best. Their total annual income

434 amounted to somewhere around 5,000 baht, which was about
463 four times as much as the labor earnings of an average rice
621 farm operator as we shall see later.

178 The present occupational situation and accounts of
463 the changes in the past few years alone may not be enough to give us a complete picture of occupational development since the beginning of the history of Bangchan. Fortunately, however, since settlement in the village in a considerable scale took place only some eighty years ago, evidence from genealogical studies has provided us with ample materials on which a reconstruction of the past development may be made.

[175] When Bangchan was being settled in the 1870's, as a probable consequence of the increasing national and international demand for rice and the revolutionary change in Thai society, every family was naturally a farm operator family. As long as there was land available for clearing, opportunity would be open for every new family, either branching off from the old ones or moving in from the outside, to operate a rice farm.

(161] Eventually, population grew up to a size large enough
[434] to support a temple in 1895. Population growth and the
[175] emergence of a village center at the temple prompted occupational specialization. At the beginning, investing, trading, professional servicing, and home enterprising probably took the forms of secondary occupations, while farm operating remained the primary occupation throughout. In time, these secondary occupations became more and more specialized and

178 finally, for a few families, took precedence over rice
463 growing. The relative importance of these new occupations
remained low, however, since only a few families were needed to meet the village requirements for such services.

434 The establishment of the primary school some thirty
647 years ago opened up new jobs as teachers and janitors for
875 some educated villagers who were given preference over out-
[172] siders. It should be noted, nevertheless, that at the beginning the primary school teachers were not considered as regular officials and their pay was as low as six baht a month during the prewar years. Even during the war, they did not get as proportionately large a cost-of-living raise as did other regular officials. It was only after the war that they were made regular officials and that their pay rose almost a hundred times to 400 to 550 baht a month with provision for a steady raise to more than one thousand baht
[48] a month. This new occupation in public service also increased with the extension of the central government employment into the rural areas and with improved transportation facilities which permitted an individual to commute daily between his office in Bangkok and his home in Bangchan. Thus, a Bangchan resident is now serving as an educational supervisor in the nearby Minburi District and a few others are on the regular payroll of the government-owned Bangkok Wharf.

243 With the background knowledge of the situation of
464 Bangchan farm laborers previously described in mind, we may
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*243 hypothesize that the presence of farm laborer *families* in
464 a rice growing village indicates a condition of land scarcity.
621 This is to be distinguished from the presence of farm
463 laborer families in intensive farming areas such as the truck gardening villages along the Damnernsaduag Canal and plantation villages in Cholburi where the marginal product of labor, even with the same crude implement, is much higher than that in the non-intensive rice growing areas. Usually, there are farm laborers in any commercial rice growing region, but they consist of members of farm operator families with excess family workers who work for their own *lampai*. With low marginal product of labor, the demand for extra labor outside the family is not great and is highly seasonal in rice growing villages, resulting in extremely low total income for farm laborers. Piece-working is thus only good as a subsidiary income for an under-employed farm operator family, and certainly not as the main source of income for any family. Farm laborer families such as those existing in Bangchan are indigenous and are the outgrowth of competition for land coupled with the reluctance to emigrate on the part of those who failed to rent in any land. These people prefer to remain in the home village, willing to accept meager income from piece-work which is perhaps the only type of job they could get in the village, in the meantime trying to eke out as much as possible from what nature has to offer
[161] in the form of fish or uncultivated aquatic plants. The
[148] abrupt rise of farm laborer families in Bangchan from nine

*243 464 per cent in 1949 to thirteen per cent in 1953 suggests that
621 the problem of population pressure on land has become more
161 acute, although it may also indicate changes in the cost
178 structure of rice production which will be discussed in
Chapter VI.

494 Concluding the discussion of this section, we may
465 say that rice growing is the core of the occupational struc-
222 ture of Bangchan around which other occupations rotate. It
226 is not uncommon that one family has several occupations,
*[241] and in addition to income from these most families get "free"
food in the forms of fish and uncultivated aquatic plants.
This is the principal reason why families with apparently
no cash income still thrive.

433 It is conceivable that in years of poor rice crop
434 the family put more effort in the secondary occupations;
21 when such an attempt does not work out well -- for example,
[136] no work for manual labor and no capital for trivial trade --
an effort is made to obtain subsistence directly from nature.

In any event, every family in the village is engaged
[136] in fishing in varying degree. It is because of this fact
coupled with the fact that the village fish supply is decreasing that the problem of fish conservation is very
important.

*243 Finally, the dynamic nature of rice farming, with
varying efforts on getting extra jobs and securing free food
outside the farm depending upon the increase and decrease
of the rice crop, suggests that the economy of any rice

*243 growing village could not very well be studied in a brief period of only one rice year. Rather, the field study should be extended to cover years of good as well as poor crop.

Land Utilization

Official records show that the area of land privatel owned in the seven hamlets comprising Bangchan is 6,404 rai. [58] When an estimated area of 100 rai of public land occupied by the half dozen canals is added to the private land area, the total area of the village may be figured at about 6,500 rai.

*243 The area of each of the 298 homelots in Bangchan
351 varied. It is rather difficult to get accurate figures for
423 these homelot areas. We may, however, give an allowance of
911 one rai for each homelot on the basis of crude estimate.
621 This would include space for buildings and all of the home
compound including family pools as well as kitchen garden,
and in some cases area devoted to fruit trees. Since all
of the land area in Bangchan other than homelots is devoted
to rice growing, we may estimate the land available for rice
production by simply deducting the homelot area from the
total area of land privately owned in the village. This
was found to be 6,106 rai in 1953 (Table 12).

*243 It should be noted that not all of this area of 6,10
311 rai was tilled by Bangchan residents, and that some of the
423 villagers also worked on rice fields outside our arbitrary
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[TEXT CONTINUED ON PAGE 113]

TABLE 12

LAND AVAILABLE FOR RICE PRODUCTION
Bangchan, Thailand, 1953

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Hamlet	Land Privately Owned	Allowance for Houselot	Land Available for Rice Production
	rai	rai	rai
BC4	930	40	890
BC5	809	28	781
BC6	900	47	853
KY5	891	63	828
KY6	916	31	885
KY7	939	42	897
KY8	1,019	47	972
Total	6,404	298	6,106

*243 311 423 621 village boundary. Table 13 shows that Bangchan residents worked on a combined area slightly larger than that available to them in our arbitrary village limits. This situation of a village resident working on a field outside the village boundary should not be perceived as one in which the farmer in one village had to walk a few miles to work in another village, for in all cases the fields involved were in the peripheral areas.

*243 423 621 Since the approach adopted in this study was one through the people rather than through land, for ease in statistical manipulation we shall use the area worked by Bangchan residents to represent our natural Bangchan area. Thus, when we say that 64 per cent of the rice area in Bangchan are owned by operators, we refer to the 4,314 rai of the 6,722 rai worked by Bangchan residents, not the 3,908 rai of the 6,106 rai which is the actual rice area of the village.

*243 In Bangchan, as elsewhere in the country except in limited areas in part of Chiengmai and Lampoon provinces in the north, a single crop of rice is grown without any crop rotation practice. The rice season starts in late May or early June depending upon the actual arrival of the rainy season, and lasts until the harvest of late varieties in the first half of February. At the beginning of the season, the field work is concentrated in the seedbed which is about one-twelfth of the total planting area. Most of the field, then, is not occupied by the crop until transplanting time

(TEXT CONTINUED ON PAGE 115)

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TABLE 13

RICE LAND WORKED BY BANGCHAN RESIDENTS
Bangchan, Thailand, 1953

Hamlet	Land Available for Rice Production	Land Worked by Residents	Net Area Outside, Worked by Residents
	rai	rai	rai
BC4	890	801	- 89
BC5	781	497	-284
BC6	853	1,102	249
KY5	828	1,295	467
KY6	885	850	- 35
KY7	897	1,016	119
KY8	972	1,161	189
Total	6,106	6,722	616

*243 well into August and September. Thus, it would appear that the rice field is utilized for only six months of the year, leaving much to be desired for an economic use of it during the other half-year.

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911 If consideration is given to the nature of buffalo raising, however, it will be realized that these six months are not actually wasted. In the dry season following rice harvest, buffaloes feed freely on rice stumps in the fields and on supplementary straw accumulated in the homelot during threshing. After the first few showers of rain in April, the fields are gradually covered with noncultivated grasses and the buffaloes enjoy this green feed all the more. Even when the fields are wet enough for plowing in June, the early field work is concentrated on the seedbed, leaving the greater part of the fields which have not yet been plowed to the buffaloes to graze usually during their 10 a.m. to 2 p.m. recess from work in the seedbed. When the farmer starts working on the fields other than the seedbed, the grazing area is gradually reduced and the buffaloes are now partially fed with green grasses which grow wild in limited areas between rice fields and canals to which the farmer has customary right. As the grazing area is further reduced, more and more grasses are given. By the time all the fields have been plowed, the buffaloes are totally fed with the green grasses. This total green grass feeding lasts until the next harvesting season when straw becomes available to supplement green grasses which now become

231 311 more scarce as the dry season creeps in, thus completing the annual buffalo feeding cycle.

*243 231 311 [312] Double cropping has been suggested as a means by which farm income may be increased. To this suggestion several obstacles have been mentioned, most important of which center around the lack of ample water supply and water control and an envisaged severity of pests predatory on an early crop.[2] In the light of the discussion in the previous paragraph, the inevitable reduction of grazing area and the consequent loss of feed supply may be added to the list of obstacles to double cropping. It is rather unfortunate that little attention has been paid to this all important problem of buffalo feeding. The general idea seems to follow the line that there is no problem of feed and that the only problem concerning draft animals lies in the control of diseases. If this negligence persists, there is danger that the uncultivated grasses which are the least expensive buffalo feed might be depleted. Because of limited grazing area, buffaloes in most commercial rice growing villages in the Central plain are already not reproducing themselves rapidly enough to maintain their number. This is evident in the annual importation into the region from the northeast of inferior stock which is less strong and has shorter life. Without grass conservation, it would not be long when Thai farmers will have to deliberately "grow grass" for their

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[2] Janlekha, *op. cit*.

243 buffaloes heretofore undreamt of and will have to bear
231 the consequent burden of increased cost of producing rice.

311 Some description of the homelots which constitute
311 almost five per cent of the land area of Bangchan has already
351 been given in the section on vegetation, Chapter II. From
[241] the standpoint of land utilization, functions of the homelot
[295] other than providing standing room for the living quarters
[246] may be mentioned as follows:

[245] 1. It provides space for threshing and for storage of
[226] rice and farm equipment including buffaloes.
2. It provides room for chicken or duck raising.
3. It provides land for a kitchen garden, and for fruit and vegetable growing.
4. It provides space for fish trapping by the draining method.

To serve these functions, homelots in any rice growing village, where the fields are submerged under water during the entire life of the rice plant, must be high above water level during the flood season, must be well drained, and must have pools with ample shade.

243 Rice land in its natural state does not meet these
311 requirements for a homelot. In the first place its level is too low. Second, the impervious layer of clay characteristic of rice land does not permit soil drainage. To make a homelot out of rice land, it is necessary that the prospective site be mounded up to a level two or three feet higher than the level of the surrounding fields. The hole from which

#263 earth has been removed for the purpose of raising the yard
811 becomes a fish pool simply by the construction of a ditch
connecting the hole with the canal, thus partially giving
812 the last mentioned requisite of a homelot. Again, in the
851 process of mounding up the homelot the soil may be made well drained by skillful handling of the earth. The technique adopted by the Chinese experts in the famous truck gardening area of Damnernsaduag is to remove the top soil first from the strip intended to be the ridge of the prospective vegetable garden. Then the top soil of the adjacent area intended to be the pool is also removed, and these top soils from the two adjacent strips of land are put together in one pile. Next, the tough subsoil of the pool strip is dug up and placed over the bare subsoil of the ridge strip. Finally, the subsoil ridge thus elevated is covered with the topsoils from the mixed pile. By this manipulation the depth of the top soil of the newly created ridge is greatly increased from the original depth of about 8-10 inches to perhaps 16-20 inches. The presence of the pool, also newly created, along the ridges further enhances the draining quality of the strip. Unfortunately, this technique was unknown in Bangchan, and mounding of the homelot was done by simply dumping the earth dug out from the strip intended to be the pool all over the land area of the prospective homelot. With the presence of the pool which served as a receptacle for water and with constant hoeing of the garden area, the soil depth also was increased and the draining quality improved.

Rice Production

#243 453 454 Rice is the single major crop of Bangchan. As of 1953 eighty-five per cent of Bangchan families derived their main source of income from rice production either as farm operators or as farm laborers (Table 11). Furthermore, rice was grown not only by farm operator and farm laborer families but also as a side line by families reporting other occupations. In Bangchan, as in all other rice growing villages, it can be said that rice is the source, direct or indirect, of income for every family. As earlier mentioned, rice growing is the core of the occupational structure around which other occupations rotate.

Table 14 shows that the village average yield, computed from crops of a sample of 96 rice farms during 1949-52, was 28.8 tang per rai.[3] On the basis of this figure, the village total rice crop from 6,722 rai of land worked by Bangchan residents in 1953 may be estimated at 193,594 tang or about 2,130 tons of paddy.[4]

#243 453 In order to determine rice surplus in Bangchan, village rice consumption must be computed first. There are three principal uses of paddy -- as human food, poultry feed and as seeds. The village paddy consumption is shown in Table 15.

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[3] See Chapter IV for the sampling technique.

[4] One tang of paddy grown in Bangchan weighs approximately eleven kilograms.

[TEXT CONTINUED ON PAGE 122]

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TABLE 14

VILLAGE RICE ACREAGE, CROP, AVERAGE YIELD, AND CROP INDEX BY YEAR, 1948-52

Year	Area Planted to Rice	Total Crop	Av. Yield Per Rai	Crop Index*
	rai	tang	tang	
1948	3,384	108,760	32.1	111.4
1949	3,130	77,892	25.0	86.8
1950	3,102	99,225	32.0	111.1
1951	3,039	89,898	29.6	102.7
1952	3,046	76,670	25.2	87.5
Total	15,701	452,445	--	--
Average	3,140	90,489	28.8	100.0

* Average yield during 1948-1952 as 100.

TABLE 15

VILLAGE PADDY CONSUMPTION
Bangchan, Thailand, 1953

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Item	Units of Consumption	Rate	Total Consumption
		tang	tang
Food	1,372 man equivalent	38.3	52,548
Feed	5,066 chicken equiv.	4.0	20,264
Seeds	7,682 rai equivalent	1.0	7,682
Total		--	80,494

*243 433 In Table 15, units of consumption of paddy are arrived at by the following procedure:

*243 433 176 1. Food. Children age 14 and under are considered to have one-half of the rate of consumption of adults and the old. Thus, 644 children in Table 2 comprise 322 man equivalent units of consumption. When 1,050 people over 14 years of age, each having one man equivalent unit of consumption, are added, a total of 1,372 units is obtained.

The rate of consumption of 38.3 tang per man equivalent was obtained from our consumption study of 106 families in 1953.

*243 433 235 2. Feed. Due to the lack of adequate data for 1953, figures obtained by the poultry survey conducted in 1949 were used in the calculation for feed. Items in that survey include roosters, hens, chicks, and ducks. Information on poultry feed consumption was obtained from Luang Suwan, the poultry expert of Kasetsat University, Bangkok, who gave the following figures: roosters, hens and ducks, naturally raised, consume four tang of paddy per head per year; and a chick's paddy consumption, negligible at the beginning but gradually increasing with its age, is about three tang per year. Most of these chicks were disposed of at the age of seven months when each had consumed about one tang. One chicken equivalent is therefore assigned to each head of roosters, hens and ducks, and one-fourth chicken equivalent to each chick. On the basis of a stock of 17 chicken equivalents per family, which was found to be the case in 1949, *243 483 295 a total of 5,066 chicken equivalents was estimated for 1953.

*243 423 3. Seeds. Since broadcast and transplanted rice require different amounts of seeds per rai, the total rice area planted to broadcast and transplanted rice must first be reduced into comparable figures -- the rai equivalent, or an area of one raidfor transplanted rice and two rai for broadcast rice. We do not know the actual proportion of broadcast area to transplanted area in 1953, but the proportion figure of 497 1/4 to 3,030 or roughly one to six for 1949 may be assumed.[5] Thus, the total area of 6,722 rai for both broadcast and transplant rice is changed into 7,682 rai equivalent for the purpose of estimating the amount of seeds required. It was found in 1949 that one tang of seed was used for each rai equivalent of rice field. This figuro is used in the present calculation.

Table 16 shows that an annual surplus of 113,100 tang of paddy, or about 1,244 tons, was estimated for 1953 on the basis of past performance. This is about 58 per cent of the crop.

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[5] Sharp *et al.*, *op. cit.*, pp. 145-46.

TABLE 16

ESTIMATED VILLAGE PADDY SURPLUS
Bangchan, Thailand, 1953

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Paddy Production		193,594 tang
Paddy Consumption		
As food	52,548	
As feed	20,264	
As seeds	7,682	
Sub-total		80,494 tang
Paddy Surplus		113,100 tang

Other Food Production

235 Other food products which are produced in a consider-
433 able amount in Bangchan include chicken eggs, duck eggs,
and fish. To a lesser extent, fruit and vegetables are
also produced locally.

Practically every family in Bangchan raises chickens, and half raise ducks. In April, 1949, the author conducted a poultry survey covering 46 families whose homes were on the banks of Bangchan Canals. Of these, 45 families were found to be raising chickens and 23 families raising ducks.

Of 45 families raising chickens, 38 families from
which data were available reported rates of egg production
showing that for these families 53,750 eggs were produced
annually from 376 laying hens, averaging 143 eggs per hen.
[146] Of 31 families who gave information about sales, five con-
[438] sumed all 2,260 chicken eggs produced; the other 26 families
sold 31,040 eggs and consumed 5,590. The proportion of
consumption to sale was thus 7,850 to 31,040 or approxi-
mately one to four.

There were 393 laying hens in the yards of 45 fami-
lies, averaging 8.6 hens per family. Chicken egg production
[434] was estimated at 1,230 per family. Assuming that four-fifths
of these were sold at three for one baht, which was the local
price in 1949, average cash income for these families from
sale of chicken eggs was estimated at 326 baht annually.
[435] With a higher price in 1953 of fifty satang a piece, the
estimated income from sale of chicken eggs rose to 492 baht
per family.

235 433 434 Of the 46 families covered by the survey, 23 or one-half raised ducks with an average annual production of 155 eggs per duck, and an average of 11.7 ducks per family raising them. Egg production for each of these families thus averaged about 1,800 per year. Of these, 1,350 were consumed by the family and 450 sold at the same price as chicken eggs. It was estimated, then, that from duck eggs alone, the average cash income in 1949 was about 150 baht per family raising ducks.

226 262 433 [434] After rice, fish were by far the most important ingredient in the diet of Bangchan. In contrast to poultry, however, fish did not constitute a source of cash income of the villagers. As a matter of fact, more fish were bought from the outside than the negligible amount that was exported from the village mainly by one or two very poor families who had availed themselves of this means of augmenting [435] their income. From our consumption study of 106 families in 1953, it was found that of an aggregate amount of 17,786 kilograms consumed by these families in the previous year 16,027 kilograms were caught by the families while 1,759 kilograms were bought at five baht per kilogram. The rate of fish production may thus be estimated at 151 kilograms annually per family, or 44,998 kilograms for the entire village.

262 244 433 The same consumption study shows that the 106 families consumed in 1953 a total of 18,402 kilograms of vegetables all of which were produced or acquired by the families.

262 averaging 174 kilograms annually per family. It should
244 be noted here, as will be elaborated in the section on
433 consumption in Part II of this study, that while most
respondents could fairly well estimate their rates of consumption of such items as rice and fish sauce which were somewhat constant, they were not as good in estimating their consumption of vegetables. Furthermore, while admitting that they did buy some vegetables during the year, they were reluctant to give any estimate of the purchase for fear of too much inaccuracy. At most, they were willing only to say that the amount of vegetables purchased was only a small fraction of what they produced or acquired freely from the canals.

245 Fruit production was even more difficult to estimate
433 than vegetable production, and we had to be content with
only qualitative information which appears in the section on vegetation on pages 42-43 of this study. Our records show that a few families reported nominal incomes of some forty or fifty baht annually from sale of fruit to neighbors.

Table 17 shows estimated village production and surpluses of farm products other than rice, namely, chicken eggs, duck eggs, fish, vegetables, and fruit. The estimates are based on the poultry survey of 1949 and the consumption study of 1953.

*243 While the methods of selling and storing paddy enable
433 the farmer to know the exact amount of his crop, which condi-
*128 tion leads to our confidence in the accuracy of our estimate

[TEXT CONTINUED ON PAGE 129]

TABLE 17

ESTIMATED VILLAGE PRODUCTION AND SURPLUSES OF SECONDARY FARM PRODUCTS
Bangchan, Thailand, 1953

Items	Production	Consumption	Surplus
Chicken eggs	366,540 eggs	73,308 eggs	293,232 eggs
Duck eggs	268,200 eggs	201,500 eggs	67,050 eggs
Fish	44,998 kg.	59,943 kg.	-4,945 kg.
Vegetables	51,852 kg.	51,852 kg.	--
Fruit	not available	not available	not available

*243 of village production and surplus of paddy (Table 16) there
433 were no comparable basis for our estimate of the other crops.
#(21) Our estimates of these other crops should therefore be considered as crude estimates.

433 Tables 16 and 17 show that in 1953 Bangchan had
438 surpluses of 104,756 tang of paddy, 293,232 chicken eggs,
435 and 67,050 duck eggs, and a deficit of 4,945 kilograms of fish. Using the 1953 farm prices of 9 baht per tang of paddy, 0.40 baht per chicken egg, 0.50 baht per duck egg, and 5 baht per kilogram of fish, village exports may be estimated at 942,804 baht for paddy, 146,616 baht for chicken eggs, and 33,525 baht for duck eggs, and village import of fish may be estimated at 24,725 baht.

*243 Land Tenure

311 Table 18 shows that Bangchan residents owned an aggre-
423 gate area of 4,315 rai. Since their combined area planted
427 to rice was 6,722 rai, the balance of 2,407 rai had to be provided by absentee landowners. In fact an area larger than 2,407 rai had to be rented in because part of the area owned by local residents had to be used as homelots. Actually, the net area rented in was 2,438 rai (total area rented in of 3,641 rai minus total area of 1,203 rai rented out). It is not to be expected, however, that this extra area of 31 rai (an excess of 2,438 over 2,407 rai) is enough to ac-
#121 commodate the 298 homelots in the village. Inaccuracies might have arisen in cases of joint ownership of certain

[TEXT CONTINUED ON PAGE 131]

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TABLE 18

RICE AREAS WORKED, OWNED, RENTED IN, AND RENTED OUT
Bangchan, Thailand, 1953

Hamlet	Total Families	Total Population	Area in Rai: Worked	Owned	Rented In	Rented Out
BG4	40	236	861	849	413	450
BG5	28	136	497	305	261	65
BG6	47	270	1,132	576	531	—
KY5	63	356	1,295	963	834	487
KY6	31	168	850	585	354	95
KY7	42	250	1,016	597	527	108
KY8	47	278	1,161	440	721	—
Total	298	1,694	6,722	4,315	3,641	1,203
Areas per family			22.4	14.5	12.2	4.0
Areas per man			4.0	2.5	2.1	0.7

243 423 427 128 parcels by siblings who failed to include their share in those parcels in the reporting of areas owned. For want of a proper basis for adjustment, we chose to let the figures stand as they were reported.

Table 19 shows that the combined area in rice of all the 216 farms in Bangchan was 6,638 rai, or almost 99 per cent of total area planted to rice by the residents, the balance of 84 rai being worked on by residents whose occupations were those other than farm operating. Of these 216 farms, 48 were classified as all owned, 88 part owned, and 80 all rented.

182 184 423 554 427 128 The conventional system of classifying farms according to land tenure into all owned (owner-operator), part-owned (part-owner), and all rented (tenant) should not be used without modification as a classification of economic or social status in population pressure areas where an efficient size farm is usually an exception rather than a rule. In these areas, it does not hold, as it seems to imply, that an owner-operator has a superior economic status than a part-owner and that a part-owner is still in a better eco-
[484] nomic position than a tenant. There is a wide range in size of farm operation and hence of incomes within these categories.

Within the category of owner-operator, there are major differences in size of operation and hence economic and social status. If a farmer -- to cite a specific case, Farmer A in BC4 -- owns the large area of rice of 235 rai,

[TEXT CONTINUED ON PAGE 133a]

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TABLE 19

DISTRIBUTION OF 216 FARMS ACCORDING TO LAND TENURE, BY CONVENTIONAL CLASSIFICATION
Bangchan, Thailand, 1953

Land Tenure	Number of Farms	Working Area				Average Number of Rai Operated
		Rai Owned	Rai Rented*	Total Rai Operated		
				Actual	Per Cent	
All owned**	48	1,589	--	1,589	23.9	33.1
Part owned	88	1,511	1,583	3,094	46.6	35.2
All rented	80	--	1,955	1,955	29.5	24.4
Total	216	3,100	3,538	6,638	100.0	30.7

* In cases where an operator both rents in and rents out some land, the net area rented in is used.

** Figures include only land owned and operated, land rented out is not included.

TABLE 20

DISTRIBUTION OF 216 FARMS ACCORDING TO LAND TENURE, BY SUGGESTED METHOD OF CLASSIFICATION
Bangchan, Thailand, 1953

Land Tenure	Number of Farms	Working Area				Average Number of Rai Operated
		Rai Owned	Rai Rented*	Total Rai Operated		
				Actual	Per Cent	
Landlord-operator	11	517	—	517	7.8	47.0
Owner-operator	79	2,131	513	2,644	39.8	33.5
Part-owner	23	227	325	552	8.3	24.0
Tenant	103	225	2,700	2,925	44.1	28.4
Total	216	3,100	3,538	6,638	100.0	30.7

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* In cases where an operator both rents in and rents out some land, the net area rented in is used.

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7: Janlekha X-4.5 (1948-1953)1956 AO7 Central Thai AO7
Bangchan

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#129

he may rent out some and retain only the part he can operate well. In this case he chose to operate 65 rai in 1953, renting out the balance of 170 rai. On the other hand, another farmer -- Farmer B, also in BC4 -- who owns only a small parcel of nine rai may not be able to rent in additional land to make an efficient size farm. In this case, B was not able to rent in any land and had to work on only nine rai of his own in 1953. In an area of relatively low population pressure, the probability of failure to rent in some more land may be small, but it is not so small in the relatively high population pressure areas such as Bangchan. The difference between farmers owning a small area of land and a large area is so great from the standpoint of economics and social position as to warrant having two sub-divisions of the conventional "owner-operators".

Small "owner-operators" may increase their size of operation by renting in some more land and thus becoming part-owners. These farmers actually improve their socio-economic status if they are able to move from the group of owner-operators into the group of part-owners. To use another concrete example, Farmer B, mentioned in the preceding paragraph, who worked on the nine-rai parcel of his own, does not earn more farm income than Farmer C, also in BC4, who owned 20 rai and still rented in 30 more rai in order that his four family workers including himself might be fully employed with a 50-rai farm.

*128
423 It is seen, then, that the conventional system of
427 land tenure classification is of very limited usefulness
[464] in areas where under-employment of farm labor is the general pattern. In an attempt to increase its usefulness mentioned above, a new classification system for land tenure is suggested in which the "owner-operator" category of the conventional system is sub-divided and arbitrary limits set to partially solve the problem of the third type of confusion.

The emphasis of the suggested method of classification lies in the functional aspect of each category. Thus, operators who own all the farm land they operate and still have some more land to rent out, an indication that they really have more than enough land for their farm operating occupation, are grouped under the landlord-operator category. This group resembles the conventional "owner-operator" in that in both the farmers do not rent in any more land, but differs from the latter in that they are really land saturated farmers while the latter may or may not be land saturated. Generally speaking, therefore, the new landlord-operator group are economically more secure than the conventional owner-operator group.

Operators who own all the farm land they operate but do not have any more land in the village or close neighborhood to rent out are grouped under the owner-operator category. To avoid confusion of the second two adjustments are made: (1) if a farmer owns two-thirds or more of his working area, he is included in this category; and (2) he

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is also included in the category if he owns 20 rai or more of his working area regardless of how much land he rents in. It may be noticed that the non-renting section of this group resembles the conventional "owner-operator" and the renting section resemble the most affluent section of the conventional "part-owner". Generally speaking, however, the whole group represents farmers who own the majority of their working area, or, in cases of those operating fairly large farms, own at least 20 rai of the working area -- a moderate size which may well place them in the middle third of the conventional "owner-operator" group if they should choose not to rent in any land.[7]

Operators whose working areas are more or less equally split between their own lands and rented lands are grouped under the part-owner category. Arbitrarily and more specifically, these include all operators who own one-third to almost two-thirds of their working areas with the exception of those owning 20 rai or more who are already grouped under the new owner-operator category.

Finally, operators whose working areas are predominantly rented lands are grouped under the tenant category. More specifically and also arbitrarily, these include all operators owning less than one-third of their working areas with the exception of those owning 20 rai or more.

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7. Of a total of 136 operators owning land in Bangchan, there were 66 who owned less than 20 rai (Table 21).

*128 While this "functional" classification of land tenure
423 does not eliminate all of the shortcomings of the conventional
427 method which have been accentuated by land scarcity, it evidently helps to bring about a clearer economic picture of the farm. If the primary purpose of land tenure classification is merely to establish a plain typology of the land holding situation for its own sake only, the conventional method might suffice even in farm labor underemployment areas. On the other hand, if we want to probe further into the business aspect of the farm, as we propose to do in Part II of this study, then a more revealing system of classification is perhaps necessary.

*243 It has been mentioned earlier in this section that
423 of 6,722 rai planted to rice by Bangchan residents a total
427 of 4,315 rai was locally owned (Table 18) and that a total
463 area rented in from outside renters was some 2,407 rai.
621 Since the net area rented out by local renters was 1,186 rai (Table 21), the proportion of outside renters to local renters was roughly two to one. Table 21 shows that there were 21 local renters whose main occupations were distributed among landlord-operators, trader, investors, and public servants, and that an average area rented out by each local renter was 56.5 rai.

Table 22 shows a frequency distribution of land owned by operators, and Table 23 shows a frequency distribution of land owned by non-operators.

TABLE 21

NET AREAS RENTED OUT BY VARIOUS OCCUPATIONAL GROUPS
Bangchan, Thailand, 1953

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Occupation	Number	Total Area	Ave. Area	Rang
		rai	rai	rai
Landlord-operator	10	683	68.3	5-17
Trader	5	189	37.8	17- 8
Investor	4	149	37.3	17- 7
Public servant	2	165	82.5	5-16
Total	21	1,186*	56.5	5-17

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* This figure is slightly less than total area rented out of 1,203 rai in Table 18 because net figures are used here.

TABLE 22

FREQUENCY DISTRIBUTION OF LAND OWNED BY OPERATORS BY SIZE CLASSES
Bangchan, Thailand, 1953

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Size Class	Frequency
rai	
0- 9	12
10-19	54
20-29	28
30-39	14
40-49	13
50-59	6
60-69	0
70-79	0
80-89	2
90-99	0
100-149	4
150-199	2
200 and over	1
Total	136
Mean	31.0 rai
Median	20.8 rai

TABLE 23

FREQUENCY DISTRIBUTION OF LAND OWNED BY NON-OPERATORS
BY OCCUPATIONAL GROUPS
Bangchan, Thailand, 1953

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Class	Frequency	Total Area rai	Ave. Area rai	Range rai
Farm laborer	2	8	4.0	2- 6
Trader	8	184	23.0	3- 86
Investor	5	164	32.8	10- 76
Public servant	2	167	83.5	7-160
Total	17	523	30.8	2-160

Rent of Rice Land

*128 Tables 24 and 25 show different rental methods in
178 1948 and 1952. Figures in Table 24 were obtained from our
427 records of the sample of 104 farms in operation in 1948,
and figures in Table 25 were obtained from the same sample reduced in 1952 to 96 farms which had been continuously in operation until then, the other eight farms having ceased to operate by 1952.[8]

427 It is seen that with the exception of a single case
*243 of share-cropping there were two rental methods in 1948, in
178 kind and in cash, the proportion of areas involved being
fifteen rai of rent in kind to every rai of cash rent. In 1952 rental methods remained more or less the same, consisting principally of rent in kind and cash rent, the proportion of areas involved being slightly increased to nineteen rai of rent in kind to every rai of cash rent.

*243 There was, however, a rapid rise in rent rates within
178 this period of four years. It is seen that the average rate
427 of 6.2 tang per rai in 1948 has risen to 8.1 tang per rai
435 in 1952, an increase of 31 per cent in four years.

It is interesting to note that an increased rent
[433] rate was charged in spite of the decline in yield of 32.1
tang per rai in 1948 to 25.2 tang per rai in 1952, or from the record crop index of 111.4 in 1948 to 87.5 in 1952 (Table 14).

[434] Another equally interesting point is that the increase in rent rate was charged in spite of the increases in the

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[8] See Chapter IV of the sampling technique.

[TEXT CONTINUED ON PAGE 143]

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TABLE 24

DIFFERENT RENTAL METHODS
Bangchan, Thailand, 1949*

Rate Per Rai	Rate in Tang Equivalent	Number of Parcels Reported	Total Area	Total Rent**
Kind			rai	baht
3 tang	3.0	1	11	259.38
5 tang	5.0	29	623.75	24,513.53
5 1/2 tang	5.5	1	15	648.45
6 tang	6.0	22	390	18,392.40
7 tang	7.0	15	313.50	17,248.77
8 tang	8.0	28	495.50	31,157.04
Cash				
12.50 baht	1.6	1	8	100.00
30.00 baht	3.8	6	91.50	2,745.00
41.38 baht	5.3	1	14.50	600.00
50.00 baht	6.4	1	6	300.00
Share				
50% of crop	--	1	10	--
Unspecified	--	1	20	--
Total	--	105	1,998.75	95,964.57
Average	6.2	--	1	48.89

* From the preliminary study of Bangchan, page 149.
** The 1949 farm price of 7.86 baht per tang was used.
-- Not available.

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TABLE 25

DIFFERENT RENTAL METHODS
Bangchan, Thailand, 1952

Rate Per Rai	Rate in Tang Equivalent	Number of Parcels Reported	Total Area	Total Rent*
			rai	baht
Kind				
6 tang	6.0	5	75	4,050.00
7 tang	7.0	16	253.50	22,270.50
8 tang	8.0	39	876	63,072.00
9 tang	9.0	3	39	3,159.00
10 tang	10.0	6	113	10,170.00
Cash				
40 baht	4.4	1	46	1,840.00
50 baht	5.6	3	15.50	775.00
70 baht	7.8	1	16	1,120.00
Free	--	4	(84)	--
Total	--	78	1,534	106,456.50
Average	8.1	-	1	72.66

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* The price of 9 baht per tang was used. It should be noted, however, that while the farm price of 7.86 baht per tang used in Table 24 was a result of a day by day record of actual sales during the first selling period (December-March) comprising about two-thirds of marketable paddy of 104 operators studied in 1948-49, this price of 9 baht per tang was not as systematically arrived at because we could not afford as much time in the 1952-53 study. This 9 baht was simply a rounded model price during the first selling period of the 1952-53 rice year (December 1952-March 1953).

*243
178 other items of cost of producing paddy -- in other words,
427 in spite of a decline in profit (a great decline when a
434 reduced yield is also considered). In the preliminary study
435 in 1948-49, it/was found that the average cost of producing a tang of paddy was 5.86 baht, all costs included except value of operators' labor.[9] When the value of the operators' labor of 1,000 baht for those operating ten rai or over and of 500 baht for those operating less than ten rai was included in the calculation, the cost of production was found to be 6.76 baht per tang, including 1.52 baht for rent, 3.46 baht for labor (values of operators' labor and family labor included), 0.38 baht for seeds and materials, 0.65 baht for depreciation, and 0.75 baht for interest on investment. As we shall see in the section on cost of producing paddy in Chapter VI, an estimate of cost using the 1952 prices, for time and opportunity did not permit a second cost of production study during our second period of field work in 1952-53, points toward an increase in every item of the cost of producing paddy in Bangchan.

An explanation for this abrupt rise in rental of rice land in Bangchan lies in the nature of the demand for and supply of rice land. Although rents may be surpluses

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*[128] [9] Sharp *et al, op. cit.*, p. 171. In this preliminary study, the cost of family labor was imputed (at going wage rate) from labor requirement based on acreage, the cost of the use of the operator's own land was imputed from going rent rate, and the depreciation cost was calculated by dividing the original cost of equipment by their respective expected length of service.

*243
178 from certain points of view, or for certain purposes, or
427 subject to certain interpretations, they are to the indi-
434 vidual producer no different from any other money expense.
435 They do not arise as a surplus from his own operations;
they are a cost rigidly imposed upon him by the competition
of his rivals for the use of the rent-yielding property.
They figure in the same way as do wages of labor and the
interest of capital in his computations as to the most ad-
vantageous proportion between the factors and as to the most
*[128] advantageous scale of operations.[10] Naturally, we are now
dealing with contractual rent, which is the actual sum paid
by the tenant to the landlord for the use of the land, not
the hypothetical economic rent of the classical economists.

*243 The preliminary study revealed that there was in
464 1948 under-employment on some Bangchan farms in terms of
rai worked per worker. This was shown by comparing the
number of rai worked per worker on 94 farms employing no
hired laborer with the number of rai worked per worker on
*[128] 10 farms employing one or more hired laborers. On the farms
where only family labor was used, the figure was 9.4 ad-
justed rai per worker; while on those farms which used
regularly hired laborers along with family labor, the figure
was 13.4 adjusted rai per worker. (Each rai of transplanted
rice was counted as one adjusted rai, while each rai planted
by the less-labor-requiring broadcast method was counted as
one-half of an adjusted rai.) An assumption was made that

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[10] Edward Chamberlin, The Theory of Monopolistic Competition (sixth edition; Cambridge: Harvard University Press, 1950), p. 22.

*243 464 farm operators who hired regular laborers did so because full utilization of the effort of all the family workers was not adequate. This assumption would seem to be reasonable in view of the rather high cost of hiring such laborers. It was concluded, then, that some farms in the community were below optimum size for the number of workers in the family.[11]

*243 464 161 178 This condition of farm under-employment is our basic assumption in discussing rent rates in Bangchan. With an increase in population in an area where farm operating is the core around which other less important occupations rotate, it may be reasoned that the aggregate demand for rice land in 1952 was at least as high as that in 1948 if not greater. As for the extent of under-employment of farm labor, it is interesting to note that the number of families directly engaged in rice farming, the farm operating and farm laboring families, was 256 in 1949 and 254 in 1953. With a constant supply of land (in the popular sense of the term), this more or less constant number of families directly engaged in rice farming indicated that the extent of farm under-employment in 1952 was just about the same as that in 1948. Although the average size of the family was found to be slightly smaller in 1953,[12] that slight decrease was certainly not large enough to materially affect the situation.

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[11] Sharp et al., op. cit., p. 158.

[162] [12] The average size of the family was 5.7 in 1949, and 5.5 in 1953.

*243 As long as farm under-employment prevails and as
434 long as limited opportunity for an alternative occupation
464 is open to farm operators and farm laborers, we have reason
to believe that the demand for rice land is rather inelastic.
Another important factor contributing to this belief is the
operator's concept of cost of producing paddy which seemed
to include only explicit rent (actual amount paid to the
[435] landlord) and cash operating expenses. Thus, while our
calculation shows that the cost was 6.76 baht per tang or
215 baht per rai in 1948, the figure would be only 1.71
baht per tang or about 55 baht per rai according to the
operator's concept of the cost.

*243
427 Under the conditions of farm under-employment, a
464 tenant, part-owner, or even owner-operator is willing to
178 pay high rent for an additional parcel because a larger
435 worked area would cost him only the additional explicit
rent and a small increase in seeds and materials. Unless
the extra rented parcel is so large that extra labor must
be sought outside the family, he does not have to pay any
explicit wage at all for rice production in this additional
parcel. Landlord-operators, on the other hand, are under a
different situation, for they may rightly be considered land
saturated and fully employed. Hence, the individual demand
for working land on the part of a landlord-operator is
relatively more elastic than those of the other farm oper-
*243 ators. As rent rose from 6.2 tang per rai in 1948 to 8.1
427 tang per rai in 1952, it was observed in Table 26 below that
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[TEXT CONTINUED ON PAGE 148]

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TABLE 26

RELATIVE SENSITIVITY TO CHANGE IN RENT RATES OF LANDLORD-OPERATORS AND OTHER GROUPS

Category	Area Operated					Decrease, 1948-52	
	1948	1949	1950	1951	1952	Actual	Per Cent
	rai	rai	rai	rai	rai	rai	
Landlord-operator							
Farmer A	110	100	80	70	65	45	41
Farmer B	80	80	50	8	8	72	90
Farmer C	75	75	75	75	75	0	0
Farmer D	65	70	60	70	60	5	8
Farmer E	47	47	47	47	47	0	0
Farmer F	26	26	26	5	5	21	80
Farmer G	24	0	0	0	0	24	100
Sub-total	427	398	338	275	260	167	39
Other groups of farm operators	2,981	2,732	2,764	2,764	2,786	195	7
All 104* operators	3,408	3,130	3,102	3,039	3,046	362	11

* The sample consists of 104 operators in 1948, 103 in 1949, 98 in 1950, 96 in 1951, and 96 in 1952.

*243
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427 landlord-operators were more sensitive to the change in
435 rent rates than were the other groups of farm operators.

464 Limited opportunity for an alternative occupation
621 was mentioned in the preceding paragraph as one of the factors contributing to the inelastic nature of demand for working land. It was also mentioned in the section on the occupational structure of Bangchan that farm laboring families as existing in the village were indigenous and were an outgrowth of competition for land coupled with the reluctance to emigrate on the part of those who failed to rent
[443] in any land. Limited opportunity for an alternative occupation in the village was also suggested in the same section when it was mentioned that the only possible alternative -- petty trading which was actually taken up by some former farm operators -- was limited by the fact that villagers bypassed local traders and went to the nearby market town of Minburi for major purchases and variety goods.

464 Limited opportunity for an alternative occupation
465 outside the village, however, needs elaboration. It cannot
369 be denied that wages in Bangkok, only twenty miles away and easily accessible through good road and bus services, were higher on the average than corresponding returns for labor in the village. It is important to note, however, that what will attract a villager to seek a job in Bangkok is not a higher average wage level in the city but a higher marginal wage there. Regarding the marginal wage, it is highly doubtful that a better condition exists in Bangkok.

369 167 162 It should be noted also that once a villager has moved into Bangkok he will be deprived of the privilege to acquire free food from nature -- an important economic advantage of living in the village which counts heavily when emigration to the city is being seriously contemplated.

427 423 It is seen, then, that the demand for land on the part of land-thirsty operators -- the tenants, part-owners, and owner-operators -- was high and inelastic, while the demand for land on the part of land-saturated landlord-operators was low and elastic. Since the combined demand of all landlord-operators constituted only a small fraction of the total demand (Table 20), it may be safely concluded that the aggregate demand for land in Bangchan at the period we are dealing with was high and inelastic.

311 423 427 463 Let us now consider the supply side of land. For the purpose of this discussion we may differentiate four sources of supply of a total of 6,722 rai considered to represent our natural Bangchan area. They are:

1. Land-thirsty operators -- all for implicit rent.	
a, Owner-operators	2,131 rai
b, Part-owners	227 rai
c, Tenants	225 rai
Sub-total	2,583 rai
2. Land-saturated operators (landlord-operators).	
a, For implicit rent	517 rai
b, For explicit rent	683 rai
Sub-total	1,220 rai
3. Local non-operators -- all for explicit rent.	
a, Traders	189 rai
b, Investors	149 rai
c, Public servants	165 rai
Sub-total	503 rai

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4. Non-indigenous landlords 2,416 rai (all for explicit rent).

To understand the working of the supply forces, it is necessary to break the non-indigenous landlords down into those living in the neighborhood of Bangchan, which we shall henceforth call the neighboring landlords, and those living far away, which we shall call the absentee landlords. It is regrettable that accurate figures for these breakdowns were not available, but it may be estimated on the basis of some known cases that they were roughly of the same proportion, that is, some 1,208 rai in this category were owned by neighboring landlords and the same amount by absentee landlords. On the basis of the same known cases, it may be generalized that the area of land owned by an average absentee landlord was larger than that owned by an average neighboring landlord.

It is obvious that the individual supply of land varies according to the type of the people who have command over it. Generally speaking, land-thirsty operators who supply part of their own working areas should provide an inelastic supply of land, for they will continue to offer to themselves all the land they own regardless of how the rent rate may change. All lands owned by land-thirsty operators yield only implicit rents, for if they are rented out for explicit rents, the landowners of the parcles in question would have changed their status to landlord-operators.

427 Inelasticity of supply for land among land-thirsty operators also varies with different sub-group (tenant, part-owner, or owner-operator) depending upon the degree of land thirst. Thus, supply for land among the tenants would be more inelastic than that of part-owners, and supply for land of part-owners would be more inelastic than that of owner-operators.

427
434 Landlord-operators, on the other hand, are sensitive to changes in rent rates which directly affect their incomes part of which are derived from rents. Although they will have to offer all of their lands either to themselves or to others, the proportions offered vary according to rent rates. If rent is low, they may increase their own working areas for the reason that incomes deriving from farm operation may be higher than prospective incomes from renting out the same parcels. If rent is high, they may reduce their own working areas since they may figure out that incomes from renting out those parcels are higher than the prospective incomes deriving from working on them. It is due to this capacity to adjust the proportion of working area and area rented out that landlord-operators' bidding power may be considered very strong. Other local landlords who are non-operators do not have this same capacity to increase or decrease areas offered for explicit rent. If rent is too low and they want to operate their lands instead of renting them out, they are still not as ready to do as the landlord-operators who already have the facilities for farming. The

427 434 neighboring landlords are under the same situation as the non-operator landlords. Yet these two groups are in a better position than the absentee landlords, for they are already in the locality. They are used to farming, and at least they do not have to invest on housing if they should choose to operate their own lands instead of renting them out at low rent.

427 (435) It was observed in the preliminary study that rent rates charged by local landlords were higher than those charged by the absentee landlords, the former ranging from six to eight tang per rai while the latter was only five tang per rai.[13] The discrepancy was assigned to the fact that local landlords were in a better position to sense the competition for land among farmers desirous of obtaining more land than were landlords who lived in the city. Local landlords were thus quicker to adjust rent rates to their own benefit.

Another advantage of renting land from absentee landlords was pointed out by a Bangchan tenant who said that he preferred absentee landlords to local landlords. "If you don't want to pay too much rent," said he, " you may report to the absentee landlord that you got a poor crop even though it was the best crop you ever had. You cannot do so with a local landlord, for he knows as well as we know by a glance at the parcel how many tang of paddy we are going to get." "Besides," the man continued, "local landlords often make request after request for your free

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[13] Sharp *et al.*, *op. cit.*, p. 146.

427 labor which is rather difficult to decline. There are many occasions for such request, for example, draining a pond, clearing a garden, and building and dismantling a house."

So far the arguments seem to point toward the relative leniency of absentee landlords. Condemnations of
absentee ownership of land would seem, therefore, to fall
427 wide of the mark from an equity standpoint. There is still
434 another important point, however, that should be considered.
Although we do not at present have accurate supporting data, our impression was that rents of rice land do not constitute a significant part of absentee landlords' income while they were a major consideration of the local landlords. If this impression is true, two diametrically opposite ramifications seem to follow. First, absentee landlords accept rents as they come to them and the rents tend to be lower than those accrued to local landlords' land. Second, since some absentee landlords can afford to offer their land at high rent at the risk of having no tenant to work on their land, the rents charged by these absentee landlords tend to be high. In this latter case, high rent rates on absentee landlords' land will induce a raise in the general rent rates in the village. We are now confronted with a rather difficult situation, for the actual outcome seems to depend entirely on the individual compunction of the absentee landlords.

427 Stories about both kindness and maliciousness of absentee landlords were heard in the village. On the one hand, they were looked up to as the people whose help can

427 be relied upon in time of financial crises or other sudden needs. On the other, they were pictured as a Shylock type of relentless money lenders who never let an opportunity to make a capital gain out of the villagers slip away. Our records show several cases where Bangchan tenants took the sick first to allandlord's home in Bangkok before sending him to the hospital. It was assumed that the landlord would provide food and medical care while the patient was waiting to be admitted into the hospital, and it was assumed also that the hospital bills would be paid by advances from the
427 landlord. Only one case of an unscrupulous absentee land-
556 lord was mentioned by Bangchan residents. This man is a nationalized Chinese who roamed around Bangchan some thirty years ago as a professional gambler. He enhanced his gains from gambling by lending money at high interest rates to the villagers on mortgage term and occasionally adding a zero to the amounts in the paper. Villagers said the he never hesitated to make good a foreclosure when the specified time expired, and as a result he is now in possession of about one thousand rai of land in the neighborhood of the Upper Bangchan Canal. Although he owns some land in our arbitrary Bangchan Village, the majority is out of our village limits, and thus the rent rate charged by him was not included in our rental investigation in the preliminary study. The villagers' account of this man's activities was confirmed by our Bangkok source of information who was a relative of the landlord. Surprisingly enough, it was the

427 author's father who gave this man an initial capital of 600
556 baht when he made his start in Bangchan some thirty years
ago. He is now a millionaire and a father-in-law of a
former top military officer.

427 Again it is the author's impression that, from the viewpoint of the villagers' best interests, the good side of absentee landism seems to outweigh the bad side.

427 Going back to the forces of demand for and supply of
434 rice land, it should be noticed that, as was so often the
435 case, free competition in the classical economist's sense
did not exist in Bangchan where rents were often sticky. There was a wide range of different rent rates for fields of almost homogeneous nature as far as agronomic properties were concerned. Preference for prospective tenants was observed to have a personal rather than economic basis even on the part of the local landlords who were found to be most sensitive to rent rates. When a new higher rent rate was to be charged, it was observed that the most plausible excuse had to be found and presented to the tenants by the landlord. An example was the general raise of rent in 1953 when the new land tax was raised from 0.30 to 4.00 baht per rai, whereupon most local landlords immediately raised their rent from seven tang to eight tang per rai. One tang of
[651] paddy, however, was worth nine baht. It is seen, thus, that
as a result of an increase of the government revenue of 3.70 baht per rai the local landlords also received an extra 5.30 baht per rai from their tenants who alone had to suffer an increase cost of nine baht per rai.

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In discussing the forces of demand for and supply of land in the few preceding pages, it is not the purpose of the author to quantify these forces and attempt to predict rent or the price paid by the tenant for the control of net income deriving from the use of the productive powers of the soil. Rather, the purpose is to confirm in this specific case Chamberlin's general notion that "the equilibrium of economic forces has been wrongly identified with an equilibrium between demand and supply. The latter is merely a special case of the former. Curves of demand and supply tell nothing, either by themselves or by their intersection, as to what price will be established, until other conditions are known."[14]

Prices of Land

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435 One of the most significant phenomena during the period covered by this study, from 1948 to 1953, is the rise of prices of land in Bangchan.

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*[121] Records of major receipts and expenses of 96 farm operators who have been continuously working on an average area of 3,140 rai, or 47 per cent of the total area worked by Bangchan residents, show that during this six-year period two operators sold two parcels of land and ten operators bought eleven parcels of land. Since none of these involved transaction between one and the other in our sample of 96 opera;tors, it can be said that there was a total of thirteen

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[14] Chamberlin, op. cit., p. 15.

423 purchases (or sales) of land involving operators in our
432 sample as either sellers or buyers. The price and size
as well as the time of sale of each parcel is shown in
178 Table 27. Using the highest of each year as the basis,
435 it is observed that land price in Bangchan has been rising
423 steadily from 350 baht per rai in 1948 to 700 baht in 1949, to 1,100 baht in 1950 and 1951, and then rose skyhigh to 11,000 per rai in 1953. To be sure, this spectacular rise, especially from 1951 to 1953, was largely due to the changing over of former agricultural to residential land. Nevertheless, when residential land is excluded from consideration, it is seen that the average rise in agricultural land prices was 560 per cent during the period from 1948 to 1953 (Table 28).

Perhaps a case of one large parcel in "Thung Nai Sab" in KY5 may serve to illustrate the way land prices rose in Bangchan during these past few years. The area of this parcel, which was owned by Lady Phung of Bangkok, was 100 rai. Our informant's father, Hajji Sa-ard of Bangchan Mosque, was interested in this parcel of land because it was adjacent to his land which was not far away from his home. In 1946, Lady Phung was willing to sell it at 300 baht per rai, but Sa-ard was reluctant or not quick enough to accept this offer for sale. In 1947, the lady raised her price to 350 baht and Sa-ard was ready to buy. This time it was hesitancy on Phung's part that prevented the proposed purchase from being consumated. In 1948, our

[TEXT CONTINUED ON PAGE 160]

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TABLE 27

PRICES OF RICE LAND ACTUALLY SOLD OR PURCHASED
Bangchan, Thailand, 1948-53

Year	Parcel Size	Price Per Rai	Highest Price of the Year	Average Price of the Year
	rai	baht	baht	baht
1948	11	350	350	223
	12	180		
	16	138		
1949	10	700	700	700
	10	700		
	10	700		
	10	700		
1950	1	1,100	1,100	850
	10	600		
1951	19 1/2	1,100	1,100	721
	10 1/2	1,000		
	19 1/2	250		
1952	--	--	--	--
1953	1	11,000	11,000	11,000

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TABLE 28

ESTIMATED PRICES OF BANGCHAN LAND BY ZONE SHOWING PRICE CHANGES FROM 1948 TO 1953
Bangchan, Thailand, 1948-53

Zone*	Location	1948-Price baht/rai	1953-Price baht/rai	Increase baht/rai	Increase Per cent
Residential:					
1	Roadside** (200 m. depth)	300	12,000	11,700	3,900
Agricultural:					
2	"Thung Nai Sab"-	270	1,500	1,230	456
3	"Thung Nai Pho"	280	1,800	1,520	543
4	"Thung Kl. Kred"	250	2,000	1,750	700
5	Kl. Kred - Kl. Bangchan	230	1,500	1,270	552
6	Kl. Krached-Kl. Bangchan	210	1,500	1,290	614
7	Kl. Bangchan-Kl. Kralog	200	1,200	1,000	500
	Av. for ag. land	240	1,583	1,343	560

* See Map I.
** In 1948, this zone was still considered agricultural land -- not residential land as it was in 1953.

178
423 informant said that some of the lady's tenants who had been
435 renting the parcel told her that she should not let it go under 500 baht per rai. Our informant thought that these tenants did not want to see any transfer of the ownership of the parcel for fear that it might adversely affect their prospective tenure. Lady Phung therefore raised her price to 550 baht. At this price Sa-ard gave up his intention of buying the land. In 1949, four tenants (all are included in our sample of 96 farm operators, hence the purchases are shown in Table 27) jointly purchased 40 rai of this parcel, and one Nai Ma of Klong 13 bought the remaining 60 rai of the 100-rai parcel at 700 baht per rai. The four tenants divided the land equally among themselves (10 rai each) and paid 7,000 baht each with borrowed money. In 1952 an offer to buy at 1,000 baht per rai was made for the same parcel but none of the new owners wanted to sell any of his land. In 1953 the price rose to 1,500-2,000 baht per rai and again none of the owners contemplated selling his land. Of the four tenants, Farmer A was luckiest because his share was attached to the Minburi Road and the price of this specific portion has risen to somewhere around 12,000 baht per rai.

The case just mentioned shows one significant point regarding the price of land in Bangchan other than the steady rise -- that nearness to the road was not a factor of price distinction until after 1949, for if it was, there would certainly have been some difficulty in dividing the 40-rai piece among the four tenants.

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115 Table 28 shows estimated prices of land in Bangchan in 1948 and in 1953. These prices are estimates made by our informant who is a son of Hajji Sa-ard mentioned in an earlier paragraph. He is one of the best informed persons in the village, has visited Mecca, and has received a higher education than any other person in Bangchan with the possible exception of one store-keeper who had spent a few years in the Military Academy in the 1910's.

Our informant, who will henceforth be called by his real name -- Hajji Direg, based his estimates of land prices in Bangchan on what he was willing to pay. He was aware of locational variation in prices of land in the village. Strictly speaking, this is not contradictory to our assumption of homogeneous nature of soils in Bangchan, for slight variation in Direg's estimated prices was due, according to him, to differences in the land levels which affected the cost of irrigation and drainage. Direg divided Bangchan into seven land-price zones (Table 28 and Map I). It is seen in this table that the 1948 price ranged from 200 baht per rai in Zone 7 to 300 baht per rai in Zone 1, averaging 249 baht per rai.

178
423
435 Table 28 shows that the average price of agricultural land in Bangchan rose from 240 baht per rai in 1948 to 1,583 baht in 1953, an increase of more than five times in six years. Most remarkable was the increase of the price of land in Zone 1 from 300 baht per rai to 12,000 baht per rai. The increase in the price of land in Zone 1 shows that land

[TEXT CONTINUED ON PAGE 163]

MAP I

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634
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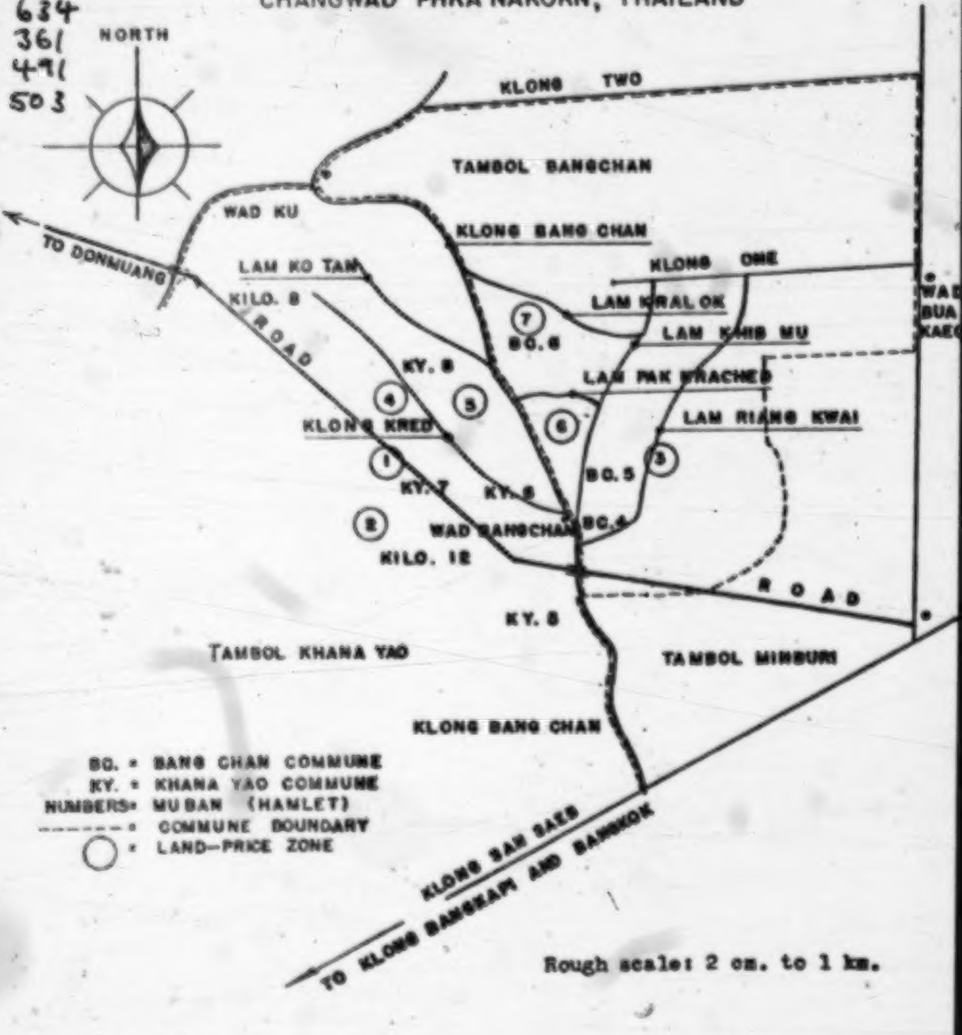
SKETCH MAP OF TAMBOL KHANA YAO, AMPHOE BANGKAPI AND TAMBOL BANGCHAN, AMPHOE MINBURI CHANGWAD PHRA NAKORN, THAILAND


NORTH
KLONG TWO
TAMBOL BANGCHAN
WAD KU
KLONG BANG CHAN
TO DONMUANG
LAM KO TAN
KLONG ONE
KILO. 8
LAM KRAL OK
7
BC. 6
WAD BUA KAEO
LAM KHIB MU
ROAD
KY. 8
LAM PAK KRACHED
4
5
6
KLONG KRED
LAM RIANG KWAI
1
3
BC. 5
KY. 7
KY. 8
2
WAD BANGCHAN
BC. 4
KILO. 12
ROAD
KY. 5
TAMBOL KHANA YAO
TAMBOL MINBURI
KLONG BANG CHAN
BC. = BANG CHAN COMMUNE
KY. = KHANA YAO COMMUNE
NUMBERS= MUBAN (HAMLET)
------- = COMMUNE BOUNDARY
○ = LAND-PRICE ZONE
KLONG SAN SAEB
TO KLONG BANGKAPI AND BANGKOK

Rough scale: 2 cm. to 1 km.

178 in this zone has since been considered as residential land
423 although there has not been any apparent change in land
435 utilization.

178 It should be noted in this connection that during
423 the same period of 1948-53 there has been a steady rise in
435 the price of residential land in Bangkok at a highly varying rate depending upon location. For the purpose of our discussion, we may consider only the price of land in the northern suburb of Bangkok, on each side of Paholyotin Road (the popular Bangkok-Donmuang Road) which branches off at Kilometer 20 into Minburi Road which cuts across Bangchan Canal at Kilometer 13 (Crossing of Paholyotin and Minburi Roads as Km.0). It has been observed that the price of land on each side of Paholyotin Road has been increasing rapidly: a parcel at Km. 11 which was valued at 50,000 baht per rai in 1952, for example, was sold at 150,000 baht per rai in 1954. It has also been observed that price of land in this section of the Bangkok suburb declines with the distance from Bangkok proper: the 1954 price was 150,000 per rai at Km. 11, and 50,000 baht per rai at Km. 20 where the Minburi Road begins. If the Minburi Road is considered as a continuation of Paholyotin Road, it is only natural that the price of land would gradually decline to 12,000 baht per rai at Km. 13.

182 It is conceivable that the recent increase in Bangkok
423 population is one among several factors causing the rapid
435 rise of residential land prices. When the rapidity of the
369

182
423 rate of increase in land price is considered, however, it
435 is reasonable to believe that population increase is
369 certainly not the only factor.

[121] It is not the purpose of this study to deal with the price of urban land. Neither the problem of land utilization nor the whole economy of Bangchan can be clearly understood, however, without some account of the rapid building up of urban land prices in recent years. It is thus necessary to digress at this point into some factors accountable for this rapid rise.

369 It has been observed that the volume of domestic
454 saving in Thailand is small because of the low level of
423 435 income, and that such saving as does take place tends to be
178 put into real estate and gold and jewelry. Concentration
182 of income resulting from the postwar phenomenon of shifting of political and economic power into the hands of few people, however, has somewhat increased the proportion of saving; but this is again used largely to purchase real estate. The natural result is the boosting up of urban land prices especially in the suburban sections where there has been a relatively high degree of improvement in road construction since the war.

This investment in land purchase has more than ever
423 45 before assumed a speculative nature. This is largely due
178 to the experience of inflation initiated by World War II
369 whereby huge and easy profits could be made from buying
182 and selling of land. Corruption in the sale and purchase

423 of government real estates has no doubt increased these
45 speculative activities. The process has also been greatly
178
369 accelerated by an enormous increase since the war of banking
182 facilities, which traditionally extend loans on mortgage of
real estate. It should be noted in this connection that the demand for loans in Bangkok has been so great as to allow most commercial banks to adopt a highly discriminating policy of extending loans only to their favored customers who are often willing to give as much as five per cent of the loan sought to bank officials as a customary "tea-money".

182 A third factor is that some organized financial
423 institutions have actively been engaged in deliberate at-
435 tempts to boost up land prices for their own speculative
455 gains. This was the immediate cause of the rise of land
178
369 price in Zone 1 from 300 baht per rai in 1948 to 12,000 baht
per rai in 1953. According to several informants in Bangchan, a representative of an insurance company in Bangkok came to the village in 1952 and offered to buy land on each side of Minburi Road at 10,000 baht per rai. This man was able to buy 20 rai of land at Km. 8, Minburi Road, which is in the immediate neighborhood of our arbitrary Bangchan Village, at his offered price of 10,000 baht per rai. At the time of the signing of the purchase contract, he made a 10 per cent down payment of 20,000 baht. Although the balance of 180,000 baht was not paid and the contract was later forfeited, the proposed purchase immediately pushed land prices in Zone 1 up to 10,000 baht per rai or over. According to

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423 our informants, the insurance company owned hundreds of
435 rai of land in the vicinity. By spending only 20,000 baht
456 in boosting up land prices, the company thus set the stage
178 for making a large profit through sale of their own land
367 at inflated prices.

178 While the increase in land prices in Zone 1 was
423 attributable to the sudden assumption of residential land
435 prices, this explanation does not apply to the increases
in land prices in the other zones which have remained agricultural throughout. Although less spectacular than the case of Zone 1, the rise in land prices in these six zones was also quite abrupt, averaging 560 per cent for the five-year period from 1948 to 1953 (Table 28).

423 Capitalized valuation of these farm lands (Zones
434 2-7) may shed some light on the situation, although there
427 is limitation especially to the cost concept. There are two
ways by which a capitalized value of farm lands may be obtained: (1) by capitalizing income from the farm operation left after payment of all factor costs except land, and (2) by capitalizing income deriving from explicit rent of the land.

*243 Receipt from one rai of rice land in 1948 may be cal-
435 culated from the crop of 32.1 tang at 252 baht, using that
434 year's average farm price of 7.86 baht per tang of paddy.
423 When the cost, including an imputed return to all labor but
427 excluding rent, of 166 baht per rai is deducted, a residual
return to land of 86 baht per rai is obtained for the year.[15]

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[15] For want of sufficient data, it is assumed that the cost items other than rent remain the same.

*243 In 1953, figure for the size of the crop was not
423 available, but we may use the 1948-52 average of 28.8 tang
434 per rai. With the year's farm price of 9.00 baht per tang,
435 receipt may be calculated at 259 baht per rai. Using the
427 same cost, again excluding rent, of 166 baht as in 1948, a
residual return to land may be estimated at 93 baht per rai.

Capitalized value of land may be calculated from the formula $v = \frac{a}{r}$ where 'v' stands for capitalized value of land, 'a' for income from the land, 'r' for the rate of interest prevailing in the locality.[16]

When the calculated residual return to land is used, the capitalized value of farm land in Bangchan (Zones 2-7) is found to be 573 baht per rai in 1948, and 620 baht per rai in 1953. When income deriving from explicit rent is used in the calculation, however, the capitalized values become 327 baht per rai in 1948 and 487 baht per rai in 1953.

178 It is interesting to note that capitalized values of
423 land computed from these two different types of income were
434 closer to each other in 1953 (487 baht computed from income
427 deriving from explicit rent as against 620 baht computed
435 from the calculated residual return to land) than in 1948
(327 baht computed from income deriving from explicit rent
as against 573 baht computed from the calculated residual
return to land). In other words, landlords are now receiving
a larger proportion of the residual after payment of all

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[426] [16] The rate of interest of 15 per cent per year is used. This is the minimum going rate with security. Without security, the rate may be as high as 30 to 50 per cent per year.

178 423 434 427 435 factors, except land, at the going rate of return. A more interesting point to note is that the capitalized value of land in 1948 (327-573 baht per rai) was substantially higher by either method of calculation that the average price of farm land in that same year (240 baht per rai), while the capitalized value of land in 1953 by either method of calculation (487-620 baht per rai) was far below the average price of farm land in that same year (1,583 baht per rai).

The situation in 1953 indicates that the price of farm land in Bangchan has been bid up too high. The stickiness of rent rates in the locality mentioned earlier together with the fact that landlords are now receiving a larger proportion of the residual after payment of all factors, except land, at the going rate of return have led us to the belief that the proportionate share of the landlords will be increasing in the near future.

PART II

000

BUSINESS AND LIVING ASPECTS OF THE FARM

CHAPTER IV

FARMING POPULATION

*243
*128 It was indicated in the section on occupational
463 structure in Bangchan, Chapter III, that there were two
621 groups of villagers whose main incomes were directly derived
from farming -- the farm operating and farm laboring families. These two groups constituted 254 out of a total of 298 families in the village in 1953 (Table 10). It should be noted, however; that Table 10 was constructed on the basis of the principal source of income of the family heads, and that the family was taken as a unit.

When individual farm workers are considered, four groups may be differentiated: (1) Farm operators; (2) Family workers; (3) Hired laborers; and (4) Piece-workers.

*243 Farm operators are those who are assumed to actively
*128 manage the farm. Actually, it has been observed that some
462 wives did direct the farm work while their husbands assumed
593 only a passive role. It is rather difficult, however, to
point out among some one hundred couples which spouse actually manages the family farm. To save time, and perhaps embarassment, it was assumed that, where both husband and wife were involved, the husband -- the official family head --was the farm operator regardless of his actual role.

*243 59 46 [957] Family workers are members of farm operating families other than the farm operators themselves who regularly participate in the farm work of the families. These do not include children of school age who occasionally help in the farm work especially during the busiest period.

*243 46 592 Hired laborers are farm laborers who are hired for all or part of the work season for more or less fixed wages in kind or in cash. These hired laborers have in addition to their yearly wage a privilege to board and lodge freely at their employers' home, and thus become part of their employers' household. The contract, usually verbal, is on a one year basis.

*243 46 Piece-workers are farm laborers who receive wages on a piece-work basis for such short-term tasks as uprooting the seedlings, transplanting, and harvesting. Payment for piece-work is made at the end of the day at going rates. It has been observed that most of the extra work in Bangchan is done by piece-workers, and that very few farms engage hired laborers. Piece-workers may be called independent workers, for they have no obligation other than finishing the day's task agreed upon. They may work whenever they please and may stop working altogether if they have enough money. The disadvantage of piece-workers is that they do not have, as hired laborers do, the guarantee of a job. This is quite crucial especially if under-employment of farm labor exists.

*243 Difficulty arises when farm workers are classified
466 individually because of duplication. It was mentioned in Chapter II that family members might work for their lampai after they had fulfilled their obligation on the family farm work. It is seen, then, that a family member may be considered as both family worker and piece-worker. Even the farm operator himself may earn extra income from piece-working and thus becomes also a piece-worker. In fact, most farm operators who had only a small area to work did have time to earn extra income this way. It is only the hired laborer that could not earn extra income from piece-working because he is bound by contract to devote all his time to his employer's farm and household work. It is considered unbecoming for a hired laborer to take time out, even at night, to fish for his own biological family.

Sampling Technique

*128 So far we have been dealing mostly with the universe
621 of our study -- the total population of our "natural" Bangchan Village as defined in Chapter II; although occasionally, it might have been noticed, reference has been made to a sample of 104 farm operators and of 96 continuing farm operators.

[121] Our primary attempt in this community study is to
[161] cover the entire village. It is obvious, however, that all relevant information cannot be gathered on some 300 families comprising this village of about 1,700 people. We may, for

*128 621 example, make a direct count of all the families and the people living in the village. We may proceed to get the data of family composition, of land tenure, and of the main occupation for all these families. But we certainly would have neither the facility nor the time to study the business aspect of some 220 farms operated by Bangchan residents. In the study of labor utilization, where daily records of labor employed by the hour is necessary, we first tried two farms but later had to be content with records from only one farm.

It would appear that, while certain aspects of this study involved data from the universe, other aspects might be more efficiently carried on by sample study.

*128 There were, however, a series of technical problems in sampling. It must be recalled that we first went into Bangchan in September, 1948 with almost no basic economic information except the commonsense knowledge that it was a rice growing village which appeared to meet our basic requirements for a field site for a preliminary community study. After checking with the district office and subsequently with Bangchan headmen, it was found that even the latest official census for the village was both inadequate and inaccurate, although it did serve as an invaluable benchmark for the 1949- and 1953-censuses made entirely by our staff. As indicated in the chapter on methodology (pages 36-43), the nature of our area approach study by researchers of different disciplines had given top priority to our

*128 rapport with the villagers even at the expense of certain much needed information, only very informal interviews were made in the first few months during which time no attempt was made at any businesslike questioning. As a result, it was not until May, 1949 that the first of our Bangchan censuses was completed.

125 With scanty background materials, we had, nevertheless, decided to concentrate our effort on the farm operating group at the very beginning. The reason for this approach is simple: it was readily seen that this group was the core of the community.

Since we had only one year for the preliminary study, the pressure of time led us to conduct the farm survey even before the first census materials were available. Simple random sampling, therefore, could not be made, because the population was not yet known. By that time, however, we had already defined our geographical area of the village (page 53), and were thus in a position at least to adopt the block sampling method.

We decided to cover all farms on which operators lived on both sides of Bangchan Canal in the immediate neighborhood of Wat Bangchan. This included all farms operated by residents of hamlets BC4 and KY5, and a few farms operated by residents of KY6. It may be seen in the sketch map on page 162 that BC4, KY5, and KY6 form the nucleus of our natural Bangchan Village, the outer zone consisting of BC5, BC6, KY7 and KY8.

125 These two selected blocks on each side of Bangchan Canal included some 80 homes of Bangchan operators, 25 in BC4, 37 in KY5, and 18 in KY6; and we actually covered 76 farm operators living in these two blocks, or 95 per cent of the total.

A technical problem then arose: should we or should we not limit our sample of these 76 farms?

There appeared to be two advantages of limiting our sample to 76 farms: (1) by so doing we had almost a 100-per-cent sample of farms operated by Gangchan residents who lived in the immediate neighborhood of Wat Bangchan; and (2) since these 76 farm operators were most accessible to us (our field office was on the BC4 bank of Bangchan Canal opposite the temple), much time could be saved in contacting the operators.

The disadvantage of limiting the sample to these 76 farms was that we would not have any representation from operators living in the outer zone of our natural village. This was a serious disadvantage when the primary purpose of our study was one of problem locating rather than one of mere description. To partially solve this problem, we decided to include in our sample also farms operated by residents of the other hamlets, namely, BC5, BC6, KY7, and KY8. Since time and other considerations did not permit an equally large proportion, quotas were allotted for these four hamlets.

TABLE 29

REPRESENTATION OF 104 SELECTED FARMS IN THE TOTAL FARM POPULATION, BY HAMLET
Bangchan, Thailand, 1948

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Hamlet	Number of Selected Farms	Village Total	Per Cent
BC4	25	25	100
BC5	7	25	28
BC6	7	38	18
KY5	35	37	95
KY6	16	25	64
KY7	9	37	24
KY8	5	42	12
Total	104	229	45

125 It is seen in Table 29 that seven farms were selected from BC5, seven from BC6, nine from KY7, and five from KY8. At the beginning a quota of seven farms was arbitrarily chosen. The reason for the choice of seven farms was that one might make seven short visits to farm operators in the outer zone in just one trip. This is an important consideration in our type of survey work where constant visits for additional information and checking were necessary. In actual practice, the number of selected farms in KY8 was reduced to five because this hamlet was farthest from our field office, and the number for KY7 was increased to nine to include all farms operated by KY7 residents who lived on the eastern side of the Minburi Road which were naturally easiest for us to reach.

Thus, the sampling technique adopted in choosing 104 farms was a combination of block sampling and quota sampling methods, both being under a more inclusive category of judgment sampling as distinct from random sampling.

Effect of Time Element on the Size of the Sample

After the 104 farm operators living in the seven hamlets were chosen for our sample, records of their business and living aspects were made to cover continuously the period from 1948 through 1953. With the progress of time, it is natural that the size of the sample has tended to decline, since some of these farm operators have died, moved out of the village, or changed their occupation from farm operating to others.

125

Table 30 shows that the size of the sample has continuously decreased from 104 in 1948 to 103 in 1949, 98 in 1950, 96 in 1951, 96 in 1952, and finally 87 in 1953.[1] It should be noted, however, that we re-visited the village in 1952 and that most of our materials on business and living aspects of the farms were gathered from the sample-farms existing in that year; hence we occasionally referred to the sample of 96 continuing farms.

One way of minimizing the problem of declining size of the sample is to include in the sample new farm operating families which have branched out from the original sample-families. It was found that there were ten such families when we re-visited the village to continue the study in 1952. If this method were adopted, it would mean that the size of our sample would then be 106 farms, a figure which does not differ very much from the original size of 104 farms in 1948.

Another way of solving the problem is to abolish the continuing operator approach entirely in favor of the re-sampling approach -- that is, a fixed sample size is chosen and new sampling is done every time a new survey is to be conducted. This approach, however, has the drawback that

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*[243] [1] According to Table 14, crop indices were as low as 86.8
for 1949, and 87.5 for 1952; while those for 1948, 1950
[178] and 1951 were 111.4, 111.1 and 102.7 respectively. It
[433] is worth noting that a relatively large number of farm
operators changed their occupation (or moved out of
[463] the village) in 1950 and 1953. When Table 14 is studied
together with Table 30, it is seen that there is a close
[182] correlation between change in occupation (or change of
farming place) and crop failure in the preceding year.

[TEXT CONTINUED ON PAGE 180]

TABLE 30

CHANGES IN OCCUPATION OF 104 SELECTED OPERATORS*
Bangchan, Thailand, 1948-53

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Occupation	1948	1949	1950	1951	1952	1953
Farm operator	104	103	98	96	96	87
Farm laborer	-	-	-	-	1	3
Trader	-	-	-	-	-	2
Investor	-	1	1	1	1	3
Professional	-	-	-	-	-	-
Public servant	-	-	-	-	-	-
Home enterpriser	-	-	-	-	-	-
Priest or novice	-	-	-	-	-	-
Miscellaneous	-	-	-	-	-	1
Disappeared	-	-	5	7	6	8
Total	104	104	104	104	104	104

* Explanation for those changing occupation:
1949 A became an investor.

1950 B moved out to unknown locality.
C moved out to Lam Kralog.
D moved out to Sai Kong Din.
E moved out to Bang Plee.
F moved out to Bang Plee.

1951 G died, and family moved out to unknown locality.
H moved to Bangkok.

1952 H moved back from Bangkok into the village, became farm laborer.

1953 I moved to Lard Krabang.
J stopped farming, became an investor.
K stopped farming, became an investor.
L stopped farming, became a trader.
M stopped farming, became a farm laborer.
N stopped farming, became a farm laborer.
O's occupation became obscure (under miscellaneous).
P stopped farming, became a trader.
Q's family lost its identity, was annexed by a farm operating family not in the sample.

125 it would deny any benefit that would arise out of continuous observation of each farm and farm operator through a series of years. With a view to retaining this benefit of continuity, we decided to adopt the first method -- that, is, we included in the sample the ten new families branching out from the original sample-families. Thus, in our subsequent study in 1952 the size of our sample became 106 farm operating families.

There were, however, some types of data which involved records in the past four or five years, such as harvested crop during 1948-52, accumulation of wealth, major receipts and expenses during the same period. In these cases we naturally used the continuing sample of 96 families.

*243 Composition of Farm Operating Families

162 Table 31 shows that the size of the farm operating
592 family decreased from 6.3 in 1948 to 5.7 in 1952. It also shows that, while the number of adults remained more or less constant, the decrease in the size of the family was due almost entirely to the decrease in the number of the young from 2.5 in 1948 to 2.0 in 1952.

*243
162 A possible explanation for this lies in the economic consequence of the war. Strict government control of the
592
182 price of rice and of the internal movement of paddy during
178 the war and also in the immediate postwar period has so
[582] adversely affected the economic condition of rice farmers that marriage has often been postponed. In cases where

[TEXT CONTINUED ON PAGE 182]

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TABLE 31

COMPOSITION OF FARM OPERATING FAMILIES
Bangchan, Thailand, 1948 and 1953

Year	Number of Families	People Included			Average Family Composition		
		Young*	Adult**	Total	Young*	Adult**	Total
1948	104	256	398	654	2.5	3.8	6.3
1952	106	215	391	606	2.0	3.7	5.7

* Age 14 years and under.

** Age over 14 years.

*243 marriage did take place, the couple were usually obliged
162 to stay with the parents of either the husband or the wife.
178 It is reasonable to believe that the nascent period was
592 prolonged during this period of hard times. Thus, the
182
[582] family size tended to be larger than it normally is. This
is especially true for rice farming families where there
always is some work for members able to work. It is not
surprising, then, that the average size of farm operating
families in Bangchan was 6.3 in 1948 while the average size
of all families was 5.7 according to the 1949 census. A
steady rise in the price of paddy after the war has improved
the economic condition of rice farmers. The increased income, however, had to be spent first on replacement of equipment and housing facilities which had been long overdue.
[792] Finally, the bumper crop of 1948 with an ever-increasing
price put an end to farm misery, and the following dry
season saw a record number of newly ordained priests and
[591] merit making activities. From then on proportionately more
marriages took place and there were fewer economic obstacles
to keep newly wed couples from starting out independently.
The combined effect of termination of prolonged nascent
period and freer establishment of new families was that
the size of the farm operating family was considerably reduced.

16 It may seem strange that more marriages should bring about a drop in the number of the young from 2.5 per family in 1948 to 2.0 in 1952. By the young is meant, however,

16 all children up to the age of 14 years. So it is only a fraction of these children, probably those in the age group of 0-3 years, that was contributed by marriages after 1948. While it is true that this contribution was quite considerable, since the proportion of children in the age group of 0-4 years rose from 10 per cent of total population in 1949 to 13 per cent in 1953, yet it was not enough to offset the effect of the decline in birth rate resulting from the war. Another factor to be considered is that children born during 1935-38, who were included as the young in the 1949 census, became adults in the 1953 census. Since these children were born before the war which did not affect their proportionate percentage in the total population, their removal from the young category in 1953 was not compensated by the entry into that category of children born during 1950-53. Finally, it was observed that among people who emigrated during 1949-53 small nuclear families consisting of young husband and wife and two or three children in the age group of 0-14 years predominated. Since the proportion of the young in these families, which had existed in Bangchan independently or more likely as a part of the extended families, is larger than the village figure, emigration must also be considered a factor responsible for the decline in the proportion of the young from 2.5 per family in 1948 to 2.0 in 1952.

#243
592 It was found in the preliminary survey in 1948 that
178 of 398 adults in the 104 sample-families 319 or 80 per cent
#128 were working members of the family. Unfortunately, we did

*243
592
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*128

not obtain comparable figure for our 106 sample-families in 1952. The question is whether or not we might assume that 80 per cent of the adult members of the 106 sample-families in 1952 were working members. It should be understood that working members of the family were those who participated in the family farm work, but they did not have to be fully employed. If the family farm is rather small, say only 10 rai, and there are as many as four able members of the family, naturally the four members will take turns in the farm work although the whole job can be easily done by two family workers or even one. In this case, we still consider that there are four working members of that family, for it is inconceivable that two able members of the family without help from the other two, would do all the farm work for the whole season.

What about the other 20 per cent of adult members? It was observed in 1948 that these adult members of farm operating families did not participate in the family farm work because they were too old to work, they were nursing mothers, sick (including pregnant), still incompetent in farm work (especially young people at the age of 15-16 years), or they were tied up with other jobs. All these factors except the last one may be considered natural factors which occur in a somewhat constant proportion regardless of time. It would seem, then, that we might reasonably assume that 80 per cent of adult members of our sample-families in 1952, or 313 out of the total of 391 persons, were working members,

*243 except for the question of some of these adults being tied
178 up with other jobs. Nevertheless, when limited job oppor-
592 tunity was considered, it was unlikely that this last
*128 factor would appreciably affect the estimate. It was assumed, therefore, that 313 out of the total of 391 adults in our 106 sample-families, or an average of 3.0 persons per family, were working members in 1952.

[162] Table 32 shows that the size of farm operating families in 1952 ranged from one to thirteen, averaging 5.7, the median being 6. Eighty-six of these 106 families, or 81 per cent, had a size between three and eight.

Training for Farm Work

*243 Every adult in the village of both sexes is expected
462 to be able to do farm work. This includes the ability to perform the following jobs.

Minimum standard: Every step of rice production except uprooting of rice seedlings which is performed only by adult males (for various steps of rice production, see the chapter on farm technology); digging and mounding; paddling and rowing; hauling except a heavy load like gas engines; tending the buffaloes and livestock; gardening; pounding of cargo rice for consumption during the work season; fishing by line-and-hook, dipping net, and trap; food preparation.

In addition to the minimum standard listed above for both male and female adults, male adults are expected to be able to perform the following jobs: Uprooting of rice

[TEXT CONTINUED ON PAGE 187]

TABLE 32

DISTRIBUTION OF FAMILY SIZE 106 FARM OPERATING FAMILIES
Bangchan, Thailand, 1953

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Family Size	Number of Families
1	2
2	4
3	15
4	16
5	17
6	12
7	14
8	12
9	8
10	4
11	1
12	0
13	1
Total	106
Mean size	5.7
Median size	6.0

*243 462 seedlings; hauling heavy loads; fishing by throwing net and by spearing; setting up and starting the windmill; starting the engine; simple carpentry work; most parts of house construction except the most technical parts like leveling and planning where the "professional" carpenters are often called in for advice; simple repairing of tools and equipment; guarding of the buffaloes and irrigation equipment left in the field when somebody must stay overnight at the temporary watch-house.

*243 861 868 In order to be competent for these various farm jobs, the young were gradually trained, starting at a rather early age of 5-7 years. At the beginning they were not forced, but allowed to participate in some simple farm work like light hauling and removal of weeds which have been turned over by harrowing. Mild pressure is applied when they grow older to the age of 8-12, and they are expected to participate in more complex and heavier jobs. More and more discipline is observed with the progress of the age of the young. The outline of training schedule which we have tried to reconstruct in collaboration with some elderly Bangchan informants is given below.

Age	Method	Kinds of Farm Work
5- 7	Not forced, but allowed or induced to work if they want to.	Light hauling, removal of weeds which have been turned over by harrowing.
8-12	Mild pressure.	Light hauling, removal of weeds which have been turned over by harrowing, some household work, and help in the kitchen (girls only).

*243 861 868

Age	Method	Kinds of Farm Work
13-14	Moderate pressure.	Hauling, weeding, buffalo tending, transplanting, chicken feeding, fishing, household work.
15-16	High pressure.	All kinds of farm work. Harrowing, harvesting, and uprooting (boys only) are started at this age.

*243 868 883 [476] By the time the young are 16 years old, they are already reliable farm hands, although they are still not considered competent enough to participate in the cooperative work to which only the best family workers are expected to be sent. By the time they reach 18 years of age, all males and females should be well trained in all kinds of farm work.

*243 857 872 [871] According to the Primary Education Law, parents are responsible for sending their children to school at the age of eight. These children are to remain in school until they are over fourteen years old, or until they have passed Pratom IV.[2] Since school hours start at nine and last until three in the afternoon, children of school age are still able to participate in the farm work before or after school hours. Moreover, most rural primary schools including the Bangchan Primary School have adjusted their vacation recesses to the periods when rice farm labor is needed most -- from August 16 to September 15 which coincides with transplanting period, and from December 16 to January 15 which coincides with harvesting period. It is during these vacations that the upperclass children are expected to contribute their

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[2] Primary education is divided into four academic years -- Pratom I, II, III, and IV.

*243 labor to the family farm work. It is also the time for
857 children of families of other occupation to earn their
872 small lampai from piece-working.

We have devoted a few pages to this topic of training
872 the young for farm work because we think it is relevant
871 to the study of the village economy. While the standard of teaching is generally poor in most primary schools in Thailand and consequently farm children receive rather poor academic education, it has been observed that their training in the farm work given by the family is exceedingly thorough. With the exception of a few bright children who are able to finish Pratom IV in four years and thus are able to leave the primary school at the age of 12, most farm children are kept in the school until the age of 14 because they usually fail in the examination at the end of each academic year and have to repeat once, twice, and even thrice. A good many are obliged to leave school at the
369 compulsory age of 14 without passing Pratom IV. Urban
87 children, on the other hand, usually pass Pratom IV at the age of 10 and are able to proceed on their secondary education at the standard age of 11 when they start their Matyom I. This is because they went to school at an early age and had better teachers at the Pratom level. Thus, farm children usually lag behind urban children in academic achievement. The situation is aggravated by the city secondary schools' practice of using students' achievement by age as the basis for admission decision. As a result, farm children do not

369 87 [464] have an opportunity for secondary education although some of them have adequate financial support. This has a tremendous effect on job opportunity for farm people, for most firms and Government departments set Matyom VIII as minimum standard for even the lowest clerical job.

*243 369 464 868 While farm children have a poor academic education, they are compensated by a high degree of farm training which includes not only the technique of rice growing but also the use of basic equipment for manual labor and simple construction work. It has been observed that farmers are better qualified to do manual work than urban people. This aptitude, however, does not to any considerable extent minimize the farmer's disadvantage in making a living other than by farming. In the first place, compensation for manual work is generally lower than the pay for clerical jobs. Second, there are in the city more job opportunities for clerical work and other white-collar types than there are for manual work. Third, the white-collar jobs tend to be more or less permanent while the manual jobs tend to be somewhat seasonal, and the manual worker seldom has a "position" in the firm as does the white-collar worker.

To the extent that these three conditions remain true, it may be assumed that the type of academic education and practical training being given to Bangchan children will serve only to confine them to farming life rather than to give them opportunity for alternative occupations.

Remunerations for Farm Work

*243 At the beginning of this chapter, four groups of
434 farm workers were mentioned -- the farm operators, family workers, hired laborers, and piece-workers.

The farm operator receives his remuneration for the farm work mainly in the form of farm income, which is the difference between total farm receipts and total farm expenses. It is the reimbursement of the farm operator and owner of the capital for labor and management and the use of capital.

There are several other ways of measuring the operator's remuneration. Net cash return, for example, is the difference between cash farm receipts and cash farm expenses. Here, increase and decrease in inventory are not considered, and neither is the unpaid labor. Averaged over a long period, the difference between farm income and net cash income due to including inventory items in one and not in the other would tend to disappear.

Two most widely used measures of the operator's remuneration, however, are labor income and labor earnings. Labor income is what a farmer receives for his year's work after paying all farm business expenses and interest on the capital invested, and in addition he has a house and farm products used in the household. Labor earnings is labor income plus the value of housing privilege and farm products used in the household.

In the American experience, it is rather difficult to estimate the value of farm products used in the farm

*243 household. Although labor earnings is a truer measure of
454 a farmer's return, it is less widely used than labor income because no such estimation is involved in this latter measure and because prequisites are much less important in the United States. On Thai rice farms, however, it is not as difficult to estimate the value of farm products used in the household because generally only one kind of farm product -- rice -- is involved and the consumption of rice, although in large amount, can be precisely determined. To a much lesser extent poultry products may be used, but it is also fairly easy to estimate.

593 In theory, the remuneration for family workers'
465 effort is imputed at the going wage rate on their actual contribution in the farm work, when labor earning is calculated. In practice, however, Bangchan family workers receive in addition to board and lodging a certain amount of cash from their family head who is also the farm operator and who pays this amount from farm net cash return. The amount an individual family worker receives varies according to individual need and often to the whim of the family head. To be sure, there is no such thing as a fixed allowance because yearly fluctuation of farm income does not permit
593 such arrangement. One Bangchan farmer put it this way,
434 "Hired labor is usually more expensive than family labor
465 except in good years, for you can't help giving generous gifts to the family in a good year. This year (1949, the year following a bumper 1948-49 crop) I gave my two daughters

434 300 baht for clothing, 500 baht which they spent mostly
465 on a pilgrimage to the Temple of Buddha's Footprint, and
593 670 baht for two gold necklaces. That's a total of 1470
baht for the two of them. My wife alone took 1,100 baht received from the sale of the early variety, and I don't want to take the trouble to ask where the money went."

It has been observed that farm income varies greatly from farm to farm as well as from year to year. Farm household expense, on the other hand, has been observed to be less variable. Although the remunerations for farm operators and family workers are directly related to farm income, it would seem unwise to discuss farm income without bringing in first the discussion on farm technology and farm organization and management. We propose, therefore, to limit at the time being our discussion of the remunerations of farm operators and family workers to indicating their respective sources only. We shall have occasion to deal with their patterns and magnitudes in Chapter VII, which will be exclusively devoted to income and consumption of farm operators.

465 The hired laborer receives his remuneration for the
178 farm work in the form of annual wage which is paid by his
employer, the farm operator, according to the provision of the oral contract made before each working season. It was found in 1948 that this annual wage was paid in either cash or kind, and in addition the laborer received free board and lodging and one or two working suits. Of 13 hired laborers covered by the 1948 survey, five were paid a cash wage

465 178 ranging from 250 baht to 800 baht annually, and eight were paid in kind. There were two types of wages in kind, the fixed and the variable types. In the fixed type, which involved two laborers, each laborer was paid a fixed amount of 100 tang of paddy. In the variable type, which involved six laborers, one laborer received the product (paddy) from 3 rai specified at the beginning of the season, four received the product from 5 rai, and one from 6 rai.[3]

*128 464 178 In 1953, a farm hired laborer survey was made to include people in Bangchan who were known to have been hired laborers and who could be located at that time. The survey was intended to serve as a benchmark for a subsequent study of farm laborers in 1956-57. The work done in 1953 was therefore only preliminary and was concentrated in locating the hired laborers and recording such basic informations as age, sex, and their jobs and remunerations during the previous five years from 1949 to 1953. Materials on life history were also gathered, but they were still incomplete. Nevertheless, information thus received about their jobs and remunerations have shed much light on wage rates of hired laborers in the village, and these are shown in Table 33.

A few points must be made clear, however, before any generalization can be made from the figures in Table 33. First, the survey included 34 persons who were known to have been hired laborers in Bangchan during the period from 1949 to 1953. Second, the survey covered only the people who were living and could be located in Bangchan in 1953; thus

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[3] Sharp et al., op. cit., p. 157.

[TEXT CONTINUED ON PAGE 196]

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TABLE 33

ANNUAL WAGES OF HIRED LABORERS IN BANGCHAN AND ITS IMMEDIATE NEIGHBORHOOD
Thailand, 1949-53

Year	Type of Wages*	Number of Laborers Reporting	Total Wage	Range	Average
1949	Cash wage	2	1600 baht	600-1000 bt	800 bt
	Kind, fixed	3	300 tang	100-100 tg	100 tg
	Kind, variable	2	9 rai	4-5 rai	4.5 rai
1950	Cash wage	4	3350 baht	400-1350 bt	838 bt
	Kind, fixed	7	600 tang	60-100 tg	86 tg
	Kind, variable	3	12 rai	3-5 rai	4.0 rai
1951	Cash wage	6	4400 baht	300-1200 bt	733 bt
	Kind, fixed	8	660 tang	50-110 tg	83 tg
	Kind, variable	3	12 rai	3-5 rai	4.0 rai
1952	Cash wage	10	8400 baht	600-1300 bt	840 bt
	Kind, fixed	7	[illegible]30 tang	50-120 tg	90 tg
	Kind, variable	3	13 rai	3-5 rai	4.3 rai
1953	Cash wage	14	12000 baht	250-1150 bt	857 bt
	Kind, fixed	2	250 tang	100-150 tg	125 tg
	Kind, variable	2	6 rai	3-3 rai	3 rai

*MCash wage -- wage was paid in cash.
Kind, fixed -- wage was paid in fixed amount of paddy agreed upon at the beginning of the season.
Kind, variable -- wage was paid in paddy harvested from a specified area agreed upon at the beginning of the season.
In all these cases, laborers received in addition free board and lodging and two working suits, one at the beginning of the period of breaking the soil and another at the beginning of the harvesting season.

*128
464 178 some hired laborers who had left the village before the survey was started were not included, and so were some former hired laborers, especially those working as such in the earlier years, who might be living in the village but were not identified as former hired laborers. Third, of the 34 cases covered by the survey nine were persons of 20 years old or younger as of 1953. Naturally, these persons would not be considered as hired laborers in 1949 or even in 1950, for they would be too young then for the job. Besides, it was not necessary that all hired laborers should begin their job as soon as they had attained the proper age of say 18 years, for there were many factors militating against taking up the job at an early age, one of which was obligation to the family. As a matter of fact, two among our 34 laborers were obliged to quit their jobs because their parents wanted them to go back to the family and help in the farm work. One of these two laborers remained with the family for a yearin 1951, went back to work with his former employer in 1952, then emerged as a farm operator in 1953. The other quitted the job in 1952 and had since remained a family worker on the family's rented farm. Fourth, these 34 laborers varied in sex, age, farming experience,
464 and working ability. Fifth, the employers of these hired
466 laborers also varied in the degree of generosity exemplified by the amount of wage they agreed to give their employees and their relative willingness to observe the oral contract. This last point was important in Bangchan where the supply

464 for labor exceeded the demand for it. Some employers were
466 known to have been in the habit of cheating their employees. To cite an example, in March 1953 A, a young man of 16 who was known to be one of the best transplanters in the village, was hired by Operator B at 50 baht a month. After working for B for three months, A quit the job because his employer had paid him only his wage for the first month and there was indication that he would not receive any more for his labor from his employer. The author was informed about this whole business by A's father, Laborer C, who complained bitterly against B. That happened just before the beginning of the 1953 rice growing season. It was rather surprising that the author discovered that a month later Laborer C was hired by his son's former employer -- Operator B. Three months later, the author saw Laborer C working not on B's field but on some body else's farm on August 19. Upon inquiry, it was found that history had again repeated itself -- Operator B had just fired Laborer C and refused to pay him for his three months' work. "He ate more, but worked less, and always found asleep," complained Operator B, "Besides, he was in the habit of criticizing me behind my back."

*128 These five points were brought up in connection with
464 Table 33 in order to caution against two generalizations
178 that might be made from a glance at the table. First, the number of laborers which appears to increase progressively from 1949 does not in any way indicate that more and more hired laborers have been employed in Bangchan. The figures

*128 of the number of hired laborers represent only the case
464 study of hired laborers who were located in 1953 and were
178 interviewed on their past records. Statistically, therefore, it would be misleading to infer the actual employment of hired laborers in each year from those figures. Second, since the same population of hired laborers was used throughout, the effect of increasing age on individual wages must be considered. This does not mean, however, that there was a tendency for the average wage in our sample to rise with the years in relation to the standard wage; because not all of the 34 hired laborers started to work in the same year, rather some started before 1949, some started in 1949, and a good many started in each of the following year. There was also the effect of the generosity of the employer which is to be considered in relation to the wage level.

It would appear, nevertheless, that employment of hired laborers in any specified year can be measured by actual counting or simple random study done in each specified year. Although this is possible now that we have fairly well established our universe, there is still the problem of the hired laborers quitting their jobs before the end of the rice season
*128 which had occurred not infrequently. The problem of varying
464 wage rates due to working ability of the laborer on the one
465 hand and to the scrupulousness of the employer on the other may, however, be partially solved by using the maximum wage of each year as the basis for generalization. It is with such cautions that the figures as presented in Table 33 might

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464 be of any help in the understanding of the hired laborer
465 situation in Bangchan.

*243 Let us now turn to the last group of farm laborers
46 -- the piece-workers. These laborers receive their remunerations in the form of cash paid at the completion of each job contracted. Four types of farm work were observed to have involved the utilization of piece-workers -- uprooting of rice seedlings, transplanting, harvesting, and digging earth and mounding. Uprooting, the heaviest of all rice growing steps because seedlings must be pulled up in budle and smashed against the shank of the worker, was limited to adult male workers. Transplanting, on the other hand, was the lightest of all these steps involving the itlization of piece-workers and may be done by all kinds of workers including the young. Harvesting and digging and mounding are too heavy for the young but not for the adult female workers to participate, so they are usually performed by adult workers of both sexes.

*243 It was found in the cost of production study in 1948
621 that 104 farm operators in Bangchan spent a total of 4,434
433 baht on uprooting done by piece-workers, 7,951 baht on trans-
[435] planting, and 13,310 baht on harvesting, or an average per farm of 43 baht for uprooting, 76 baht for transplanting, and 128 baht for harvesting. Although digging and mounding is generally considered a part of farm work since it is done primarily in order to keep the buffalo shed above the water level as well as to improve the home garden; it is not

*243 included in the items of cost of producing paddy, and there-
621 fore we do not have the figure for this item of farm expenses.
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It was earlier mentioned in the section on occupa-
tional structure in Bangchan that most villagers regardless
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464 of their main occupations did perform some piece-work for
621 either main or subsidiary incomes. It is almost impossible,
463 then, to give an exact figure of the number of piece-workers
in any one year. For the purpose of this study, however,
we may arbitrarily differentiate between the "professional"
and the "non-professional" piece-workers. Here, the classi-
fication suffers much overlapping -- even more than does the
classification of the occupation of the villagers, for we
cannot even use the concept of the main source of income as
a criterion in this connection. It was mentioned that farm
laborers existed in Bangchan not because of demand for their
work but because they have no opportunity for other occupa-
tions (page 100). Thus, if the main source of income was
used as the criterion for differentiating the "professional"
piece-workers, this group would include, for example, the
old woman described in Case 7 page 69, who after having been
left alone had managed to get a small income from trans-
planting which was the only type of farm work she could
perform. The main source of income was also not a good
criterion considering the fact that most piece-work was
done by family members after their obligation to the family
464 farm had been fulfilled. In a desperate attempt to differ-
463 entiate the professional from the non-professional piece-workers

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464 we finally settled on an arbitrary definition: a professional piece-worker was one who was ready most of the time to be called upon to perform piecework. This automatically eliminated the school children who were able to work only during the school recesses, the poor aged people who had to make a living in one form or another but who were able to perform only the lightest kind of piecework -- transplanting, and members of the well-to-do families who did some piecework for a small amount of pocket money only.

Adopting this arbitrary operational devinition, it may be assumed that professional pieceworkers include all members of the laboring families, small farm operating families, and other families of various occupations not financially well off, who are old enough yetnot too old to work and who are not currently engaged in some other kinds of work.

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463
465 Table 34 shows work records of the 34 farm laborers earlier mentioned. It is seen that of these 34 laborers, only six had remained hired laborers throughout the periods of their farm work. These were Laborers 8, 9, 11, 22, 27, and 28. The other laborers were observed to have assumed various other statutes in the course of the five-year period from 1949 to 1953, namely, farm operator, pieceworker, family worker, and transient family worker. When these laborers were interviewed, they also gave estimates of their earnings from pieceworking as far as they could remember. In 1949, for example, piecework earning figures were available from

[TEXT CONTINUED ON PAGE 203]

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TABLE 34

WORK RECORDS OF 34 SELECTED FARM LABORERS IN BANGCHAN AND ITS IMMEDIATE NEIGHBORHOOD
Thailand, 1949-53

Laborer Number	Age in 1953	Working Status				
		1949	1950	1951	1952	1953
1	23	HL	HL	FW	HL	FC
2	39	PW	PW	FW	HL	HL
3	42	...	...	PW	FW	HL
4	27	HL	HL	PW	PW	PW
5	28	HL	HL	PW	PW	PW
6	23	PW	PW	HL	HL	...
7	25	PW	...	HL	HL	HL
8	22	HL	HL	HL	HL	HL
9	23	HL	HL	HL	HL	HL
10	52	HL	HL	X	HL	HL
11	19	...	HL	HL	HL	HL
12	32	FC	FC	FC	FC	HL
13	33	PW	PW	PW	HL	HL
14	30	TFW	HL	HL	PW	PW
15	35	PW	HL	HL	HL	PW
16	20	...	TFW	TFW	HL	...
17	45	PW	PW	HL	FW	PW
18	50	PW	PW	HL	HL	HL
19	31	X	PW	HL	...	HL
20	20	TFW	TFW	TFW	FW	FW
21	19	TFW	TFW	HL	HL	HL
22	17	...	...	HL	HL	...
23	21	TFW	TFW	TFW	TFW	HL
24	23	TFW	HL	HL	...	HL
25	17	...	...	TFW	...	HL
26	40	...	...	TFW	TFW	HL
27	26	...	...	...	HL	HL
28	18	...	HL	HL	HL	HL
29	63	PW	PW	X	PW	HL
30	30	PW	X	X	PW	HL
31	36	HL	HL	HL*	FW	FW
32	16	...	...	...	PW	HL
33	23	PW	HL	HL	HL	HL
34	20	...	HL	TFW	HL	HL

Key to abbreviations:

FC -- farm operator
HL -- hired laborer
PW -- pieceworker
FW -- family worker
TFW -- transient family worker
X -- farm laborer elsewhere
(...)-- not engaged in farm work

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465 two laborers -- 1,000 baht for Laborer 7 and 900 baht for Laborer 30, averaging 950 baht for the year. In 1950, earnings of 500, 850, and 1,000 baht were reported respectively by Laborers 18, 19, and 29, averaging 783 baht for the year. In 1951, only one case of 600 baht earning was reported by Laborer 5. In 1952, earnings of 600, 1,000, 1,000, 1,000, and 350 baht were reported respectively by Laborers 5, 14, 29, 30, and 32, averaging 790 baht for the year. In 1953, earnings of 2,000, 600, 1,000, and 300 baht were reported respectively by Laborers 4, 5, 14, and 15, averaging 975 baht for the year.[4]

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464 In the preceding paragraph, the term "transient family worker" was introduced. This refers to a person distantly or not at all related to the family in question who has been accepted as a family member with a dual status of half relative and half laborer. Since there is actually no genuine family tie, such member has been observed to come in and go out of the family rather freely as the occasion [465] may arise, and hence the term "transient". While staying with the family, the transient member is expected to participate in the family work that is appropriate to him in exchange for good, shelter, clothing, and occasional monetary gifts.

In 1948, we came across a case where an old man of 80 was living with one of the seven headmen of Bangchan as

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[4] Table 53 gives an idea of the meaning in real terms of these incomes.

592 a transient member of the family. This was rather unusual,
464 however. The pattern was that a transient member was
[561] accepted when he is rather young. If he was quite mature,
he might also be accepted; but the expressed motive of the
592 accepting family would then be somewhat different. When
465 approached by a mature prospective transient member, the
464 family head would most probably say that he could not afford
to keep a hired laborer but he would be glad to let the man
or woman stay with him as a member of the family, and that
they might as well "share in the food, and share in the work".

It has been observed that transient family workers
received much less from the family than the standard wage
[435] of hired laborers. While the latter received an annual wage
of 1,000 baht or the crop from 5 rai, the former might be
given only 50 or 100 baht a year. To farm operators of moderate or large rice farms, transient family workers were certainly an economic advantage. It was quite natural that these operators would try to keep them in the family as long as possible. Among the several methods observed were the following: (1) adoption; (2) promise to sponsor ordination of the young male transient member; and (3) giving a certain amount of lampai.

592 It was mentioned in the section on the family in
464 Chapter II that adoption as practiced in Bangchan did not
[597] involve legal registration of the adopted child, and that
[792] maltreatment of adopted children was not infrequent. To
sponsor an ordination was in fact not quite as expensive

592 as it might seem to be, for there was a wide range of
464 ordination expenses and the family head naturally tended
792 to arrange one that was not so expensive unless it was for
his own son. He might even arrange a joint ordination of
592 which the cost was much reduced. Moreover, most of the cost
464 of the ordination would be covered by the customary contributions made by neighbors. The lampai arrangement, which was nothing but a sophisticated term for wage, was a real concession on the part of the family head, indicating that he really wanted to keep the transient member in the family even at a certain cash expense.

464 The presence of transient family workers and their
592 relatively low remunerations indicated a condition of popu-
466 lation pressure on land. Already, these people had adversely
[161] affected the laboring sector of the village economy because they represented an additional supply of cheap labor. Although they had contributed to a low cost of producing paddy and thus benefited the operators, with the rise of the price of foods which farmers had to buy and with the decline of free food (in the forms of fish and aquatic plants) transient family members may in time become a liability rather than an asset to the family. To be sure, when such a time has arrived, the family would be reluctant to admit a transient member. The trouble, however, is that the cost of maintaining an extra family member is implicit and not readily distinguished by the family. It would thus take some time before the real situation would be recognized.

182 464 592 Nevertheless, the advantages of transient member arrangements to both parties should not be overlooked. It has at least provided the poor with a kind of economic security, since they might arrange to join some families in the village in time of crises. This is perhaps the principal reason why the village, not the living quarter, is considered by most Bangchan people to be their home. By sending some offspring to live with a more affluent family, the poor villagers had been able to reduce the size of their families and thus had managed to prevent their level of living from falling far below the minimum level of subsistence. As for the accepting families, it has already been shown that they had enjoyed the benefit of cheap labor provided by transient family workers.

*243 Changes in Farming Population in Bangchan

178 463 621 [592] Table 11 shows that the number of farm operators in Bangchan had decreased from 229 in 1949 to 216 in 1953, while the number of the family heads whose main incomes were derived from farm labor had increased from 27 to 38 within the same period.

When the farm operating families were studied individually, it was found that 181 families had been operating their rice farms in Bangchan throughout the period. There were 48 farm operators whose names disappeared from the list of operators in 1953. These were compensated by 35 new operators. Thus, there was a net loss of 13 farm operating families during the period from 1949 to 1953.

*243 Of the 48 families disappearing from the 1953 list
16 of farm operators in the village, 21 moved out, 2 were
178 annexed, and 25 were dropped from the list because they
463 had changed their occupations to some other kinds. Among
these last mentioned, four had become investors, three traders, thirteen laborers, one public servant, and four had obscure occupations.

Of the 35 new farm operating families, 17 were immigrants moving into the village during the period between 1949 and 1953, 14 had evolved from pre-existing families, and four were families already existing in the village in 1949 but were then having some occupations other than farm operating. Among the four families last mentioned, three were formerly farm laboring families, and one was formerly an investor family.

*243 The fact that there were as many as twenty-five
178 families leaving farm operating occupation as against only
463 four families entering it within the same period seemed to
indicate that farm operation as an occupation had become less attractive in Bangchan during recent years.

It may be argued that former farm operators who had given up farming did so because of the force of special circumstances beyond their control, and that the change to other occupations was not due to the relative unattractive-
[427] ness of farm operation. A tenant operator, for example,
might have to leave the farm because his landlord no longer wanted him to work on the parcel. In fact one such case was

*243 reported where the tenant had to leave the farm in the
178 beginning of 1953 and had since become a hired laborer.
463 This was Laborer 12 shown in Table 34. In most cases of
[427] farm operators who had become farm laborers, however, they were marginal operators working on areas too small to provide decent incomes. It was found that the total working area in 1948 of thirteen farm operators who had become farm laborers was 94 rai, averaging only 7 rai per farm. It is possible to speculate, then, that low farm income was a major factor in the occupational shift among these thirteen families. To the extent that this speculation is acceptable, it may be inferred that the shift to the farm laboring profession among these thirteen cases was voluntary rather than a result of special circumstances beyond their control.

The relative unattractiveness of farm operation stands out clearly when the cases where former farm operators taking up new occupations other than farm laboring were considered. As mentioned earlier, there were twelve of these of which four had become investors, three traders, one a public servant, and four had obscure occupations. Among those having obscure occupations, two were families of old people apparently without any income, one family head was allegedly engaged in no occupation except gambling if this could be considered an occupation at all, and one family head -- the sole member of a one-man household -- was also a person of no known occupation. For obvious reason, these four cases should be left out of consideration, leaving only those who had

*243 178 463 [311] become investors, traders, and public servant. In 1948, these eight families were operating farms of a combined area of 286 rai, ranging from 20 rai to 80 rai, averaging 36 rai per farm. Seven of these eight families owned rice fields totalling 201 rai, ranging from 5 rai to 80 rai, averaging 29 rai per family owning land. Evidently, it may be said that these seven families deliberately had given up farming in favor of new occupations from which they expected higher remunerations. As for the one family owning no land, the same generalization still holds. This family was operating a 22-rai farm in 1948, a farm of optimum size which could be expected to yield a higher income than any of those operated by the thirteen former [464] [465] operators who had turned farm laborers. The head of this family, nevertheless, got a permanent job in the Bangkok Harbor, a government owned concern, with a salary of more than 7,000 baht annually which is much higher than his former net income from operating a rented farm.

A case has thus been built for the relative unattractiveness of farm operating occupation among a certain sector of farm operators who had shifted to other occupations. This was responsible for the decline of farm operating occupation from 80 per cent of the occupational structure of the village in 1949 to 72 per cent in 1953 (Table 11). If it had not been for the 14 new families branching out from existing families who had taken up farming during the period between 1949 and 1953, the decline would have been more abrupt.

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There are reasons to believe that newly established indigenous families had tended to take up farming. First, rice growing is probably the only profession that these newly wed couples had been properly trained for.[5] Second, during their nascent period their financial preparation had been oriented toward starting a rice farm. This is best illustrated by a remark of a Bangchan operator whose daughter and her husband were about to start an independent family:

> A (informant's son-in-law) is now (1954) 24 years old. I have known him since 1948 when he was a transient family member of B. A married my daughter C in 1952 and has since been living with me. He is a very diligent man who works even in the dry season -- digging earth and that sort of thing (for his own lampai).
>
> I gave the couple 200 tang of paddy for their lampai for last year's work. I am going to give them the product from 10 rai for this year's work.
>
> Already the couple have accumulated from their lampai the following: two baht weight of gold, lumber enough to construct a farm house, and 100 tang of paddy. I told them not to keep their money in cash. When they receive a certain amount of money, I instruct them to buy durable goods like lumber or buffaloes. But if they want to lend out money, it's all right with me. Any way, they are not to keep cash. By the way, they have loaned out the 100 tang of paddy, so they will have more paddy when that amount is returned with interest.
>
> The couple will leave me next year. They have most of the things they need for starting a family now. In fact they wanted to start out this year, but I asked them to stay on another year.
>
> When they leave me next year, I will give them the customary parental gifts -- one buffalo, one plow, one harrow, one clothing container, and paddy for seed and for consumption.

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[5] See the section on training for farm work.

*243 463 [423] [431] Third, among the land owning class the newly established family usually received from their parents an outright gift of land or the benefit of free use of a certain area of land for two or more years. They would not receive this gift if they did not pursue rice farming.

It is seen, then, that while rice growing might have become less attractive as an occupation, there are still some cultural factors that have been working to confirm the Bangchan villagers in their preference for rice cultivation.

CHAPTER V

FARM TECHNOLOGY

Types of Rice Cultivation

*243 Rice cultivation in Thailand may be categorized according to: (1) whether or not irrigation is used; (2) the height and rapidity of growth of the variety of rice plant used; and (3) the method of sowing.

*243
312 Upland, or non-irrigated, rice is found in some parts of north or northeast Thailand, where in many spots irrigation is impossible. The Central Plain is characterized by lowland, or irrigated, rice. Irrigated rice is of either the floating or non-floating varieties. Where the level of irrigation water cannot be well controlled, as in middle part of the Central Plain, the floating varieties are widely used because of their ability to grow sufficiently rapidly to keep up with water levels that rise three or four meters between October and November. Only the non-floating varieties are grown in Bangchan. Non-floating varieties are also capable of keeping pace with rising water levels, but not as rapid a rise as can be handled by the floating varieties. They are hence employed only where the water level is under rather effective control, as in Bangchan. The two methods of sowing are broadcasting and transplanting. The floating varieties lend

*243 312 themselves only to the broadcasting method of sowing, while the non-floating varieties are sometimes broadcast and sometimes transplanted. In the broadcasting method, the farmer simply strews the seeds on the plowed-and-harrowed field. In the more or less twice-as-laborious transplanting method the farmer first nurtures seedlings in a special bed and then at the appropriate growth stage transplants the seedlings onto his field in even rows. Both before and after transplanting, the plants require rather careful water control, possibly only by the employment of dikes. It has been observed that the method of planting is not optional with the farmer. Rather, it is governed by topography, expected condition of water supply, and availability of labor. To sum up: Bangchan rice is irrigated, non-floating, and usually transplanted but sometimes broadcast.[1]

*243 242 Any attempt to get the farmers to alter the system of planting should be planned with care; otherwise more harm than good might result. There is a general belief among leading agricultural officials that the broadcasting method is undesirable because it allegedly gives only one-half the yield of the transplanting method. The author reserves his judgment on this, for no systematic comparison between these two methods of growing rice has as yet been made. Consideration also must be given to the fact that the transplanting method

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[1] According to our 1948 survey of 104 rice farms, of a total of 3,528 rai 3,030 rai were transplanted and 498 rai broadcast. Thus, the proportion was roughly six transplanted rai to one broadcast rai.

*243 requires much additional hand labor and reduces the possibil-
242 ities for mechanization to a minimum. On the other hand, the more labor intensive transplanting method would seem to be more suitable to a population pressure area like Thailand if it really gives as relatively higher a yield as it is claimed to give.

*243 Farm equipment

351 In Thai agriculture, it is very difficult to separate
[235] the farm from the home. In the chapter on the community it
[244] has already been indicated that the home lot not only is the
[245] living place for the farm family but also provides space for
[226] threshing and for storage of farm equipment, room for chicken raising, land for kitchen garden and for fruit and vegetable growing, and space for fish trapping by the draining method.
*243 In other words, all the material components of the farm, except
351 the rice fields, are located or stored on the home lot. Here,
422 items that are uniformly or frequently found include:

A. Household equipment

1. Buildings
2. Furniture
3. Bedding facilities
4. Kitchen accessories
5. Storing facilities
6. Lamps of various sizes
7. Ritual accessories

B. Farm equipment

1. Farm building: equipment and buffalo shed.
2. Implement: plow, harrow, yoke, roller, shovel, spade, hoe, weeding knife, noria, sickle, pitchfork, rake, broom, winnowing machine, wooden winnowing spitula, basket, mat bin, box bin, home-mill.

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3. Mechanical power: windmill.
4. Engine power: internal combustion engine.
5. Fishing equipment: pressure lamp, spear, hook, throwing net, dipping net, trap.
6. Repair equipment: axe, knife, chisel, handsaw, auger set, hammer, jack plain, block plain.
7. Transportation facilities: various kinds of boats.

C. Livestock

1. Draft animals: buffaloes.
2. Poultry: chicken, duck.

D. Seeds and materials

1. Paddy for seeds and for consumption.
2. Ropes.
3. Fuel and oil for engine and for light.

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Since we are primarily concerned in this section with farm equipment, only those listed under B will be discussed. And since we are dealing primarily with rice production which is the main source of income of Bangchan rice farmers, attentio will be paid almost exclusively on the equipment which are used in the production of rice.

For the purpose of our discussion, farm equipment used in Bangchan may be categorized in a number of ways: (1) According to their use in the various processes of rice production; (2) According to their relative degree of indispensibility on rice farms; (3) According to their relative prices, and the cose of maintenance and repair; and (4) According to their historical improvement.

*243

Farm equipment was used in Bangchan in different processes of rice production as follow:

*243

Processes of rice production	List of equipment used
Repair dikes	Shovel, spade, hoe
Break and level soil	Plow, harrow, roller, yoke
Irrigation and drainage	Windmill, engine, noria, spade, shovel, hoe
Weeding	Weeding knife, hoe
Harvesting	Sickle
Hauling	Boat
Threshing	Pitchfork, rake, broom
Winnowing	Wooden winnowing spatula, winnowing machine
Storing	Basket, mat bin, box bin

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Most of the equipment enumerated above were indispensible on rice farms. Only where there were substitutions -- for example, the windmill and the internal combustion engine, and the wooden winnowing spatula and the winnowing machine -- either the less costly but more labor using or the more costly but less labor using instruments might be used. It was observe however, that while the less affluent farm operators were able to use the less costly of these irrigation and winnowing equipment, the affluent farm operators kept both and utilized each appropriately. When only a small amount of water was needed in the field, for example, they might use the windmill althoug the engine was available, because the windmill was already on the field and it was only a question of hitching the noria to it while the use of the engine involved heavy hauling and some extra cost of fuel.

As a matter of fact, both the windmill and the engine were not absolutely indispensable. In 1948, it was found

*243 that of the total of 104 farms under the survey, 77 farms
312 were equipped with either or both of these major irrigation
402 equipment and 37 farms did not have any of these. It was found also that the average yield of farms with irrigation facilities was 32.2 tang per rai as against 30.7 tang of farms without irrigation facilities. It must be noted, however, that Bangchan farmers reported that the water condition of the 1948-49 crop year was ideal for rice growing, one which occurs only once in a life time. Farmers unequipped with irrigation facilities were thus not as much handicapped as they would be in the less favorable years. Moreover, it has been a customary practice for farmers who had enough water in their fields to drain excess water into the fields of their neighbors who need some water. If the neighbors still need more water, they may get a free use of the windmill which has completed its service for the year to its owner. Thus in a good year, a windmill owner would have less use of the instrument which in turn becomes more available to neighboring farmers. In a drought year, on the other hand, the owner uses more of his windmill, and prospective borrowers have a slim chance to use the instrument. It would appear, then, that if the survey were conducted in a drought year, the disparity between the average yield of farmers owning irrigation facilities and of farmers not owning ones would be much larger than 1.5 tang per rai as was the case for the crop year 1948-49.

*243 We may thus group farm equipment according to their
*128 relative degree of indispensability as follow:

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A. Indispensable: Shovel, spade, hoe, plow, harrow, roller, yoke, weeding knife, sickl boat, pitchfork, rake, broom, wood spatula, basket, mat bin, box bin.

B. Dispensable, but essential for good crop productio Windmill, noria.

C. Unnecessary, but contributing to convenience: Engine, winnowing machine, and oth

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Price of various items of farm equipment varies from as low as 0.25 baht a piece for a broom to two thousand baht for a good boat. To avoid confusion, we shall use only the average of different prices for 1948 reported by our sample farm operators for the same item of equipment in order to eli inate variations due to quality. We may arbitrarily categorize farm equipment into low-price and high-price equipment, considering items costing under 100 baht as low-price equipment and items costing 100 baht or over as high-price equipment. On this basis, various farm equipment used by the 104 farm operators in 1948 are listed below.

Items	Average prices (1948)
A. Low-price	
Coconut broom	0.25 baht
Pitchfork	1.50 "
Shovel	3.16 "
Rake	4.75 "
Chinese broom	12.00 "
Yoke	12.06 "
Hoe	13.50 "
Basket	15.00 "
Weeding knife	19.00 "
Sickle	24.00 "
Harrow	30.00 "
Box bin	43.00 "
Mat bin	51.50 "
Plow	80.00 "

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B. High-price

Noria	309.00 baht
Sampan boat	386.00 "
Windmill	429.00 "
Winnowing machine	498.00 "
Mard boat	1,046.00 "
Chala boat	1,400.00 "

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Prices of equipment used in rice farming give us only an idea of the initial investment necessary to start a rice farm and the cost of investment in this equipment, which may be calculated in terms of interest on that investment. Prices alone, however, do not determine the annual cost incurred in the use of farm equipment; for some items remain in service for several years while others have a relatively short life, and they all differ in the relative cost of repair and maintenance.

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In the 1948-49 survey of 104 farms, two types of schedules were used. The "early schedule" was administered to the first fifty respondents, and the "late schedule" was administered to the rest. The early schedule was more detaile than the late schedule. For example, in the early schedule there are detailed questions on the original cost and subsequen depreciation of each plow, and each detachable plow-part, owned by each of the fifty respondents in the early sample. On the basis of these responses, we calculated the average depreciation rate of plows. Each of the fifty-four respondent to the late schedule was asked only one question on plows, vi the number of plows he owned. In the case of each plow of each respondent to the late schedule, we simply applied the average cost and depreciation figures resulting from the earl

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schedule. Thus, in our late sample much laborious detail wa obviated.

On the basis of responses from fifty farm operators, annual depreciation for each item of farm equipment used in 1948-49 was calculated below:

Items	Depreciation baht/year
1. Coconut broom	0.25
2. Pitchfork	0.33
3. Yoke	1.17
4. Weeding knife	1.67
5. Hoe	2.51
6. Shovel	2.79
7. Basket	3.00
8. Rake	3.39
9. Harrow	3,42
10. Mat bin	3.85
11. Sickle	8.90
12. Box bin	10.32
13. Chinese broom	12.00
14. Plow	16.88
15. Winnowing machine	42.69
16. Noria	57.95
17. Sampan boat	65.83
18. Mard boat	84.81
19. Windmill	85.00
20. Chala boat	86.10

Several methods of computing depreciation were adopte In most cases, where the equipment was valueless at the end of its servicable life, the annual depreciation was calculated by simply dividing the original cost of each item by it expected length of service in years. In cases where the equi ment consisted of detachable parts, e.g., plows and windmill the cost of replacement of each part was first determined an then reduced into annual replacement cost, then the annual replacement costs of all parts were added together to make th

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*243 annual depreciation of the equipment in question. In cases
435 where the equipment still had some market values at the end of their servicable lives, these residual values were first deducted from the original costs before they were divided by the length of service. The most complicated cases were those of chala and mard boats and the noria, which involved annual maintenance and minor repair as well as periodical major repair in say every four or five years before they were finally and totally worn out at the end of their rather long services of from twenty to fifty years. In each of these cases, all items of such expenses -- annual maintenance and minor repairs as well as periodical major repairs -- were added to the original cost and the total was divided by the entire length of service in order to arrive at the annual depreciation figure.

*243 With few exceptions, all farm equipment enumerated
178 above have been used by Thai farmers for centuries. Thus, since the establishment of the village there has been no change in the use of such basic agricultural tools as the plow, harrow, hoe, weeding knife and sickle. Moreover, it may be said also that there have been only slight modifications, if any at all, in these equipment during the long course of their usage. The plow, harrow, or sickle which is now being used in Bangchan is perhaps of the same type and appearance as would have been seen centuries ago.

*243 Standing in contrast to these basic agricultural tools,
177 the first known propeller windmill in Thailand, according to
178 testimonies by Bangchan informants, was invented by Nai Yong
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A 243 177 178 402 Manichaem of KYB in 1940. An official report to the Director of the Department of Agriculture in 1940,[2] however, gives the credit to Nai San of Lard Buakhao, Minburi, who lived only four miles to the south of Manichaem's home. The buying up of gasoline engines by the Japanese during the occupation period served to facilitate the spread of this device. Gasoline engines probably came to the village about 1930 or slightly later. In 1948, there were five engines owned by Bangchan residents. Because of the exceptionally good water condition of that year, these engines were not used in rice production. They were not, therefore, included in our calculation of the cost of producing paddy in 1948. It was observed that their use was limited to fishing by the draining method. The winnowing machine, which utilizes a hand-operated fan arrangement, is relatively new. It is rather expensive, costing an average of 498 baht. Only 21 out of the 104 farmers in our 1948-sample could afford to own it, the rest being obliged to use the traditional winnowing method of simply tossing the grains into the air by wooden spatula and letting the wind carryaway the chaffs.

According to historical improvement, farm equipment may thus be categorized as follow:

A. Old simple tools without any modification:

Shovel, spade, hoe, plow, harrow, roller, yoke, weeding knife, sickle, boat, pitchfork, rake, broom, wooden spatula, basket, mat bin, box bin.

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[2] Submitted by Yingsakdi Israsena and Kamol Janlekha.

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B. Old equipment with slight modifications:

Noria (larger ones are now used because they are more adapted to windmills than smaller ones to which human energy was applied in the old days).

C. Recently employed equipment, mostly labor saving devices:

Gasoline engine, first used in Bangchan in 1930 or slightly later.
Winnowing machine, relatively new, date of introduction into the village not certain.
Propeller windmill, allegedly invented in the village, first used in 1940.

On the whole, it may be said that very few improvements have been made in farm equipment. For this, two opposing explanations may be advanced: (1) Little attention has been paid in the past to farm equipment, resulting in continual using of primitive implements which are inefficient and could be improved if enough attention and effort along the line were given; (2) These basic farm equipment are functionally efficient although they may be simple in form -- the fact that there has been no structurally change in the past few hundred years means that they have successfully stood the test of time rather than that the effort to improve these equipment has been lacking.

The author reserves his judgment on the validity of either of these two explanations, for scientific study of rice farm equipment in Thailand on which proper judgment may be based is not known to him.

Draft Animals

231 In Bangchan, as in most of the rice producing areas of the country, only one kind of draft animal is used -- the buffalo. This subject has already been dealt with in the

231 section on livestock, Chapter 2. The method of buffalo feed has also been mentioned in the section on land utilization, Chapter 3.

*243 231 Inasmuch as draft animals, or more specifically buffaloes, provide services in rice production, they may very well be considered a kind of farm equipment. They are used in all steps of breaking and leveling the soil and also in threshing. They are absolutely indispensable on rice farms.

231 435 [237] An average purchased value of a work buffalo was 985 baht per head. According to the 1948 survey, buffaloes began their farm work at the age of 4-5 years and remained in service for an average of 10½ years. When they are dead, their meat is consumed and the hide is dired and made into rope. Some farmers sold the buffalo carcass on the spot and received an average price of 250 baht in 1948. When the original cost of 985 baht was subtracted by the residual value of 250 baht and the result was divided by the length of service of 10½ years, the annual depreciation so obtained was found to be 70 baht. This method of computation for depreciation when adopted for buffaloes appears to be rather crude, for the maintenance cost was neglected and some buffaloes might be bought at the age over 5 years (at varying prices) in which case their length of service might be expected to be shorter than 10½ years. The general pattern, however, was that farmers bought buffaloes which were freshly brought in from the northeast at the age between 4 and 5 years.

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231 Finally, buffaloes as equipment are as old as the wet rice culture itself. It is rather unfortunate that in Thailand there has been no systematic effort to improve buffalo breeds. As a matter of fact, the general practice of castrating good buffaloes so that they may turn out even better work while letting alone the inferior ones has tended to lower the working quality of the buffalo.

*243 Steps in Rice Production

In the transplanting method of growing rice, the seeds are sown first in the seedbed, and then at the appropriate growth stage the seedlings are transplanted onto the fields which have been prepared during the time the seedlings are being nurtured in the seedbed. The preparation of the seedbed is generally the same as that of the transplanted fields, except that the former is more thoroughly done since the soil in the seedbed must be finely pulverized and very well leveled. From the standpoint of labor utilization, therefore, the process of production can be more conveniently described step by step according to the work schedule of one farm which was under observation during the entire work season of the 1953-54 crop year. The various steps are listed below:

1. Plowing. Started on June 4 and ended on August 23. This immediately followed the big shower of rain on June 3 which sufficiently wet the soil. Consideration was also paid to the water level in the canal which was then high enough. Plowing was first concentrated in the field designated to be the seedbed. The parcel was plowed and cross-plowed several

*243 times, usually three or four. When the seedbed had been plowed and cross-plowed, plowing of the other fields began, but not immediately after the plowing of the seedbed, for the buffaloes were then used in harrowing of the seedbed.

2. Harrowing. Started on June 13 after plowing of the seedbed was completed and ended on August 24, the day following the completion of plowing of the fields for transplanting. As with the case of plowing, harrowing was first concentrated on the seedbed.

3. Removal of weeds after harrowing. This is a necessary step following harrowing. During the harrowing process, weeds which have been turned over by plowing are collected at the spikes of the harrow. Occasionally, the farmer will lift up his harrow in order to free it from the accumulated weeds which are thus left in small piles. Not all the weeds, however, are caught by the spikes of the harrow. The result is that after harrowing there may be seen on the parcel small piles of weeds emerging above the water, while the uncollected weeds which scatter all over the parcel are hidden under water.
[857] All these weeds must be removed from the parcel. Removal of these weeds may be done by children working side by side with adults. The weeds are first collected by hand and put in larger piles on the parcel. These larger piles are later transferred to the dike so that the parcel will be cleared of weeds. This process is usually done during the noon recess (actually from 10 a.m. to 2 p.m.) when buffaloes rest. Children may carry on the work while adults resume their plowing or harrowing

*243 in the afternoon session. This process started on June 13 and ended on August 15.

*243 312 4. Irrigation and drainage. This process includes the feeding of water into the field and removing of an over-supply of water from the field as well as repairing of the dikes so that the control of water will be effective. Repair of dikes is the first thing to be done in each work season. At first, large holes which are readily noticed are filled. Later, when water has been fed into the parcels, leakages may be noticed and blocked with earth.

The first big shower and a few more that subsequently occurred during the first few days of the work season of 1953 had given ample water so that plowing had been continuously done without any additional water until June 9, by which time the water in the seedbed parcel had been reduced by the natural process of evaporation to the point where more water had to be fed in if more plowing was to done on the parcel. Since much had to be done in the breaking of the soil in the seedbed parcel of 7 rai, water was fed into it on June 10 and 11 and thereafter whenever water was needed in any parcel. In the fields other than the seedbed, water was irrigated into the highest parcel first and was later channelled to the successive lower parcels by gravitation by simply making on opening through the dike. When there was enough water for the whole field, excess water was drained into the canals by the same gravitational method. In the case of the farm under study, irrigation and drainage started on June 4 (actual feeding of

*243 312 water started on June 10, irrigation work before that was limited to repairing the dikes) and ended on July 8.

[132] The rising of the water level in the canal from July onward, slowly at the beginning and progressively more rapidly afterward, until it reaches its ebb in November, is due to local rains as well as rains falling elsewhere which affect the general water level of the entire Central Plain. While farmers are anxious for the arrival of rains at the beginning of the rice season in order that they may get their field work started, by August their worry has shifted to too much water instead of too little. If there is too much water at this later stage when the canal water level is rapidly rising and will soon go well above the height of the dikes, there is a danger that the seedlings in the seedbed and newly transplanted rice plants may be destroyed by the flood. Every Bangchan farmer knows that as from the Buddhist Lent of each year (the full moon of the eighth lunar month -- July 27 for 1953), the fieldwork has entered a new phase when he has to spend longer hours on the field or else it might not be ready for transplanting before the canal water level rises too high to permit transplanting. Even after transplanting has been finished, unless it is done well before the flood so that the transplanted rice plants are well established on the field, the danger still exists.

*243 5. Rolling. This is a necessary step following plowing and harrowing. Only if the seedbed is to be used for a second time in the year as an additional parcel after all the

*243 seedlings have been uprooted, may rolling be omitted and the parcel be plowed and harrowed only before it is ready for transplanting. In case of the farm under study, rolling started on June 13 and ended on August 22. It may be noted here that it ended two days earlier than the last harrowing. This was possible because the last harrowing was done on the parcel which was earlier used as the seedbed, and thus rolling was not needed on this parcel.

6. Sowing and broadcasting. This step can be further broken down into cleaning of the seeds which is done by slowly pouring the seeds in the open into a receptacle some five or six feet below and letting the wind carry away the dirt, soaking, spreading of sprouted seeds, and actual sowing or broadcasting as the case may be. This whole combined step started on June 18 and ended on July 15. Since five different varieties were used, the work was spread out into four successions one of which involved two varieties at the same time.

7. Preparation and repair. This includes such items as construction of a temporary watch-house, construction of a buffalo-shed, mounding up of the earth floor of the buffalo-shed so that it would be high above the water level during the flood, and repair of equipment. According to our records, this step started on July 5 and ended on December 9.

Since our records were kept during the rice season only, the work so enumerated did not include preparations which had been made during the preceding dry season or earlier. Such work included selection and storing of the seeds which

*243 was done during the harvest time of the previous year, and preparation and repair of equipment which was done during the lean dry season. Usually, rice stumps were burnt in March or April, and this should be included in the preparation step. However, our operator did not burn rice stumps after the harvest of the previous year. The reason for not burning them was that he had a poor harvest and the left over stumps were so far apart that burning would be rather difficult. If he had a good crop, our informant said, the stumps would be close to one another so that when fire was set it would spread to the whole parcel. As was the case for the previous year, the informant said he would have to set fire on almost every stump if he wanted to burn them all. Since this would involve much labor, he decided not to burn the rice stumps at all.

When farmers were through with plowing (about September), the plow was dismantled and each part cleaned with water. At the end of the dry season when the new work season is approaching, these parts were again cleaned with water and later soaked with oil and re-set. The same care was given to the windmill, roller and noria. Other equipment like harrow, pitchfork, hoe, etc., was not dismantled. They were simply washed with water. Inspection had to be made, however, so that all of these would be ready for use when the work season began.

8. Preparation of bamboo binders. The day previous to each uprooting of seedlings in the seedbed when they were old enough to be transplanted, the farmer had to see to it that he had enough bamboo binders which were to be used in

*243 binding the seedlings into bundles. Since only fresh bamboo binders could be used, the farmer had to make them himself from the locally grown bamboos. Our records show that this step started on July 17 (the day prior to the first cooperative uprooting conducted for the farm under study) and ended on August 27.

9. Uprooting. This is the heaviest step of all farm work. The seedlings must be pulled out as many as one could each time and are smashed to the puller's shank in order to rid them of mud which accompanied the roots. These seedlings were then made into standard sized bundles with the use of bamboo binders. Each variety of seedlings must be uprooted at about the same time, for they should be all transplanted not later than the following day. Uprooted seedlings were not carried to the homeyard, but left temporarily on the dikes of the seedbed.

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476 Farmers in Bangchan organized themselves into cooperative work groups to mutually help one another in such kinds of field work as uprooting, transplanting, harvesting, and to a somewhat limited extent weeding. In case of the farm under study, more uprooting work was done through cooperative work groups than by family members working on family parcels. Our records show that uprooting by the family started on July 17 and ended on September 8, while the cooperative uprooting which the family participated started on July 15 and lasted until September 11.

10. Transplanting. Uprooted seedlings should be transplanted within a day or two. Transplanting was also done through the cooperative work group. In fact, our records show that about twice as much work was done through cooperative transplanting as that through cooperative uprooting. This was to be expected because transplanting took about twice as much time as did uprooting.

The first transplanting on the farm under study was the cooperative undertaking, which started on July 18 and ended on September 19. Transplanting by family workers started as late as August 20 and ended on September 10. In addition, 160 man-hours of transplanting was done by piece-workers. In case of uprooting, the extra labor engaged was only 39 man-hours.

11. Hauling. There were three phases of hauling of rice: (a) hauling of seedlings from the seedbed the parcel where they were to be transplanted, (b) hauling of harvested bundles of rice from the fields to the threshing floor in the homeyard, and (c) hauling of the threshed and winnowed paddy from the threshing floor to the bins. In the hauling of seedlings, we included also associated processes such as cutting of the top portion of the seedlings, counting of the bundles of seedlings, arraying them, and clearing of the top portions which had been cut out from the seedlings.

Hauling of seedlings started on July 17 and ended on September 10; hauling of harvested bundles of rice started on December 13 and ended on February 7; and hauling of winnowed

*243 paddy to the bins in the building was done only twice, on February 7 and 14.

12. Field inspection. When the farm operator and his family were going to and coming from work on the fields, they naturally made observation on the seedlings, the water level, and the field condition. From the standpoint of labor utilization, it is rather difficult to apportion the time spent on these observing activities. For the purpose of our records, therefore, we limited field inspection to special trips around the fields intentionally made for inspectional purposes only. The records show that inspection thus defined started on August 25 and ended on November 30. It must be noted that the canal water level during this period had already risen so high that it was then possible to make field inspection on boat. Usually, either the farm operator himself or his wife made a round of about two hours every other day. Since this was the period when most of the seedlings had been transplanted onto the fields, inspection was limited to observing the general growth of the plants. It was, in fact, a period when there was nothing else for the farmer to do except to wait for the rice plants to grow up to maturity and bear seeds so that they may then be harvested.

13. Care of the plants. In transplanting, three or four seedlings were planted in one stand by pressing their lower ends into the muddy ground under water, the distance of planting being about eight inches. Occasionally, some of these seedlings which had not been pressed hard enough into the soil

*243 would detach themselves from the ground and be seen afloat on the surface water. To remedy this, the farmer usually inspected his newly transplanted parcel and simply pressed the floating seedlings back into the ground. Sometimes, transplanting was poorly done or the seedlings were roughly handled during uprooting, resulting in "dead stands." These dead stands could not be distinguished from the live ones in the first few days after transplanting, for both would appear greenish yellow in color. In four days after transplanting, however, the root system of the live rice plant resumed its normal function and most stands assumed their true green color. The dead stands could then be easily detected for they remained greenish yellow. These dead stands were removed and new seedlings were transplanted in their places.

Weeding was another care given to the rice plants. Again, it was difficult to apportion the time spent on each of these separate activities -- pressing the floating seedlings back into their original position on the ground, replacement of the dead stand stands with the live seedlings, and weeding -- for at certain periods (within a few days after transplanting) they were all done in the same trip and almost concurrently.

[476] Weeding was also done cooperatively, although recently cooperative weeding has become less popular and involved only
[592] few families. It may be said, therefore, that care of the
[178] plants as of 1953-54 was largely a family undertaking. Our records show that care of the plants in our sense of the term
[476] started on July 24 and ended on September 29. Of this, the
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*243 work done by the family members themselves lasted from July
[476] 24 to September 28 and the work done through cooperative work
[592] group (weeding only) lasted from September 20 to September 29. It was observed that as from the end of September there was no need for weeding, for weeds could not keep up with the rising water level.

14. Preparation of threshing floor. When harvesting was approaching, the farmer would get busy preparing the threshing floor. He had to do this well ahead of time, that is, before harvesting actually started, or else there would be complications during that busy period. As a matter of fact, this was a rather short step of rice production. Although our records show that it lasted from November 29 to January 27, that seemingly long period was due to the fact that cracking appeared and repair of the threshing floor was necessary on the latter date. In fact, the whole work took only seven work days, involving only 13½ man-hours and 32 buffalo-hours. The method of preparing the threshing floor was simple. The ground space designated to be the floor was first soaked with water for the whole night. In the following morning, four buffaloes were led to tramp over and over this small earth floor for an hour and a half, in the meantime another worker levelled the floor with grub hoe. The process was repeated on each of the four following days until the floor became compact and level.
*243 Finally the surface was pasted with wet buffalo manure to mini-
476 mize surface cracking.

15. Harvesting. This was largely done through a

*243 476 cooperative work group, the proportion of the work done by the family workers themselves and that done through cooperative harvesting being about one to five. Cooperative harvesting started on December 4 and ended on January 25, while family harvesting started on December 12 and ended on February 6.

*243 16. Threshing. This step can be further broken down into piling of harvested bundles of rice around the threshing floor, laying some of these on the threshing floor, actual threshing by having the buffaloes tramp over and over the rice stalks with rice seeds on them (by this time the stalks had already broken loose from the bundle), frequent turning of stalks that were in the lowest layer upward (with the use of pitchforks), separating the threshed paddy from the stalks (with the use of pitchforks and rakes), and finally piling of the threshed paddy. Threshing started on December 15 and ended on February 14. It was one of the few steps in rice production in which the work was often carried on into the night.

17. Winnowing. Started on December 25 and ended on February 14. The completion of winnowing marks the end of rice production as far as rice farmers are concerned.

18. Stacking of straw. After threshing, straw was piled up in stacks around poles in the homeyard or the edge of the field near the homeyard. This was done on December 29 and February 4. It was a simple step using only a total of 16 man-hours of labor.

231 19. Procuring grass for buffaloes. Care for buffaloes is a whole year job involving leisurely work, such as taking the buffaloes to graze on the fields which any child can do,

231 as well as painstaking work like ridding them of insects during a certain period of the year by smoking throughout the night. Besides, in some years when the water level is exceptionally high, for example in 1952, the buffaloes may have to be tended in other villages of higher elevation. Moreover, there always is need for constant guard against robbery of these precious draft animals. It is extremely difficult to keep a record of labor spent on these activities. The author is reluctant to attempt even at mere estimation.

In view of the difficulties mentioned above, only the procurement of grass for the buffaloes which could be measured was taken into consideration in the computation for labor requirements in rice production. This was done with the realization that there was more labor actually spent on the tending of buffaloes which could not be estimated and which should be considered as extra work over the calculated requirement. Our records show that cutting grass for buffaloes started on June 14 and ended on November 27 when the buffaloes began to feed on straw. (This straw was obtained from a neighbor's field at the mouth of Bangchan Canal which was planted to an early variety of rice; hence, even though harvesting had not yet begun on the farm under study, it was possible to feed the buffaloes with straw and save time that would have to be spent on procuring fresh grass for buffaloes during this busy period when all available labor should be spent on harvesting.)

*243 20. Supervising the work done by cooperative workers.
476 The amount of supervision varied with the kind of cooperative

work. In cooperative uprooting, which usually started as early as 5:30 a.m. and lasted until each guest worker finished his 100th bundle of uprooted seedlings, the host did not participate in the work but had to entertain his guest workers by talking with them while they worked and providing a meal after the work. He had to see to it that every worker had enough bamboo binders to bind each bundle of uprooted seedlings, and it was his own responsibility to check that each guest had actually uprooted his share of 100 bundles. Usually, cooperative work was done on the honor system -- the bundles were not counted. In one of the cooperative weedings for the farm under study, however, one guest who had been known to be a not very fast worker finished his share too soon to the surprise of his fellow workers. Perhaps partly with a sense of curiosity and partly with a sense of justice, these other guest workers stopped their work temporarily and helped the host counting the bundles uprooted by that man. To the embarassment of all concerned, it was found that the man had actually finished only 80 bundles. In cooperative transplanting, the host was not obliged to feed guest workers. In this case, each guest worker was to finish one-fourth of a transplanted rai. The host's duty was to assign each worker to his respective plot which had to be properly measured. Earlier in the day, the host and his family had to haul the uprooted seedlings to each of these plots. While cooperative transplanting was being done, the host usually walked from one plot to another to see to it that proper distance of planting was being observed by each worker

*243 476 as unscrupulous guest workers might tend to lengthen the distance in order that they might work less because the share of work was on an area basis. In cooperative harvesting, it was customary that the host provided a meal after the work was done. As with the case of cooperative transplanting, each guest worker was to harvest an area of one-fourth of a rai. No checking was necessary in this case. In the rather unsignificant cooperative weeding, the host worked side by side with guest workers in the same plot, and work was measured by the time spent on weeding -- in "day" or "half-day," one "day" being an equivalent of six-hours' work and correspondingly one "half-day" an equivalent of three-hours' work. Guest workers were induced to weed more intensively by an offer of prizes in the form of cigarettes for a certain number of bamboo binders they collected in the course of weeding (by pulling). The underlying idea was that since these bamboo binders which were left in the parcel during transplanting sank deep in the soil, thus the amount of bamboo binders collected by each guest worker more or less indicated his weeding effort.

Our records show that supervision of cooperative work started on July 22 and ended on January 24.

*243 476 461 21. Entertaining guest workers. It was already mentioned in the previous step that customarily the host provided food to guest workers in cooperative uprooting and cooperative harvesting. To feed some twenty to thirty people was quite a job, thus practically all family workers were occupied in food preparation and serving on these occasions. Our records show that entertaining guest workers started on July 22 and ended on January 24, and that while supervision of cooperative work

*243
476 utilized only 26 man-hours of labor, entertaining the same
461 groups involved as many as 158½ man-hours.

Labor Requirement in Rice Production

*243 During the 1953-54 rice year, an exploratory study of
461 labor requirement in rice production was conducted, using
*128 only one farm. This farm was operated by Headman Chom Srisuay of KY5. It was one among the 104 sample farms covered by the preliminary survey in 1948-49. The choice of this farm was made on the basis of the high degree of cooperation given us by Chom and all his family.

[594] During the period covered by this special study of labor requirement, Chom had a family of nine, consisting of Husband Chom (47), Wife Sai (44), three sons -- Phuan (19), Phan (16) and Phloen (8), and four daughters -- Phung (15), Phad (13), Bunmarg (7) and Mian (4).

In the year of the study of labor requirement, Chom operated a farm of 49 rai consisting of four parcels: Parcel A, 7 rai; Parcel B, 20 rai; Parcel C, 7 rai; Parcel D, 15 rai. The locations of these parcels are shown in the sketch map on page

Part of Parcel A was used at the beginning of the sea-
*243 son as seedbed. After the seedlings had been uprooted and
461 transplanted, this parcel was again plowed and harrowed and planted to three varieties of rice -- Mue Hag, Ched Ruang and Khao Sa-ing. Parcel B was also planted to three varieties -- Mue Hag, Ched Ruang and glutinous rice. Parcel C was planted to only one variety -- Mue Hag. Parcel D was planted to two

*243
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varieties -- Khao Sa-ing and floating rice. The areas in each parcel planted to different varieties are given below.

Parcel	Total area rai	Area planted to each variety Var. name	Area in rai
A	7	Mue Hag	3
		Khao Sa-ing	3
		Ched Ruang	1
B	20	Mue Hag	10
		Ched Ruang	7½
		Glutinous rice	2½
C	7	Mue Hag	7
D	15	Khao Sa-ing	9
		Floating rice	6

It may be seen that actually there were five varieties altogether. The areas devoted to these varieties were as follow: Mue Hag, 20 rai; Khao Sa-ing, 12 rai; Ched Ruang, 8½ rai; glutinous rice, 2½ rai; floating rice, 6 rai. Since 6 rai was planted to floating rice and it was mentioned in the first section of this chapter that this floating rice lent itself only to the broadcasting method, it may be noted here that of the total area in rice of 49 rai, 43 rai was devoted to transplanted rice and 6 rai was devoted to broadcast rice.

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Of the nine members of the family, Chom, Sai, Phuan and Phan were first-rate workers while Phung -- the fifteen year old daughter -- was diligent but still needed more training in the farm work. Chom kept four buffaloes. Thus the needed four regular workers who were supposed to be Chom, Sai, Phuan and Phan. When the work season was about to begin, however, Phan was engaged by the Cornell research team as a

[TEXT CONTINUED ON PAGE 242a]

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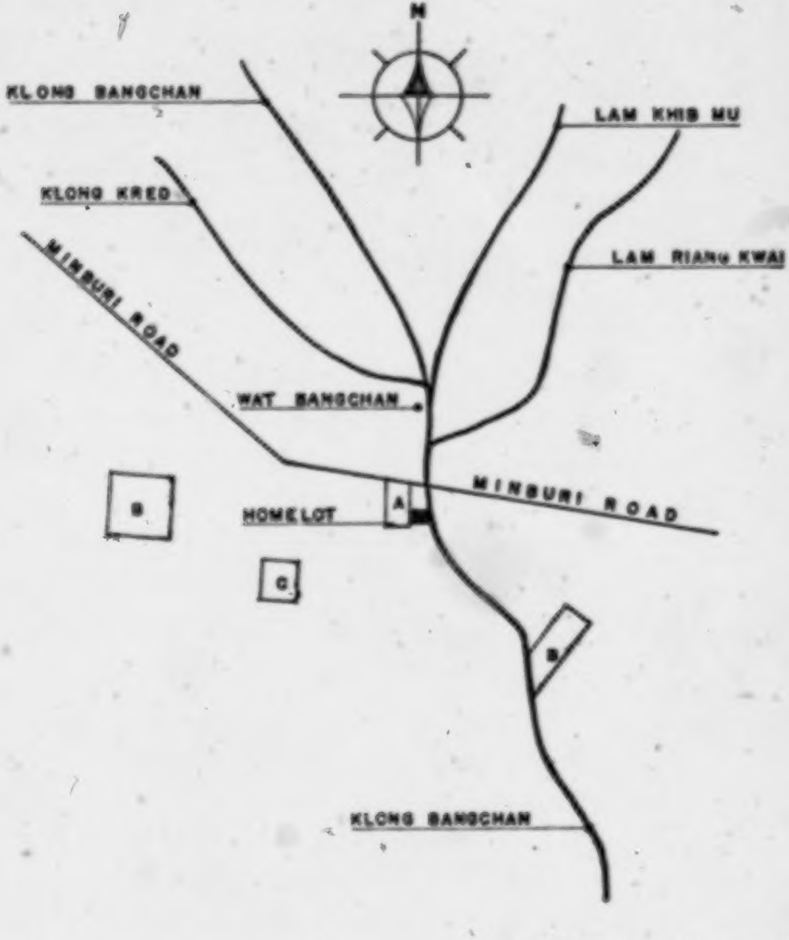
MAP II

SKETCH MAP OF CHOM FARM AND HOME LOT
BANGCHAN, THAILAND
1953


N
KLONG BANGCHAN
LAM KHIB MU
KLONG KRED
LAM RIANG KWAI
MINBURI ROAD
WAT BANGCHAN
MINBURI ROAD
B
HOME LOT
A
C
B
KLONG BANGCHAN

Rough scale: 4 cm. to 1 k

*243 row man. He could not very well be substituted by his younger
594 sister who was also needed to perform the housework. A worker
461 was thus hired for the period of two months -- from the middle
[464] of June to the middle of August -- primarily to help in plowing. Phan also partially helped in plowing and harrowing in part of the morning session before he started his work for the Cornell team at nine o'clock.

[476] During the cooperative work season, Chom represented the family in cooperative uprooting and cooperative harvesting, and Phuan in cooperative transplanting, weeding and harvesting. Phan also represented the family in cooperative work scheduled for Saturdays and Sundays when he was free from Cornell duty.

*243 Work records of all workers of this farm were kept by
461 the author throughout the work season from June 4, 1953 to
*128 February 14, 1954. At the beginning, the author stayed overnight with the family. Family workers were requested to give accounts of their activities of the day. To facilitate more accurate accounts regarding the time of the work, a clock was
[115] given to the family. When family workers became acquainted with the type of information that was needed, Phan, our row man, was assigned to make a daily report on the kinds and time of work done by each worker. Phan's daily report was taken down by the author in the labor schedule specially prepared for the purpose.[3] Later, when Phan's reporting skill was well developed, he was asked to report on the daily labor records only four times a week, usually Monday, Tuesday, Thursday and Friday.

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[3] See Appendix B.

*243 461 *128 [231] [464] [592] [476] Since the farm work usually followed the same pattern for a certain period, it was observed that Phan remembered quite well the time and the kind of work done by each family worker during the past two or even three days. The time of work was recorded to the hearest half-hour. In Tables 35 and 35, labor spent by family workers, piece-workers hired by the family, and buffaloes, on different steps in rice production was given in man-hours and buffalo-hours. The dates when these various jobs started and ended were also given. It should be noted, however, that labor recorded as spent on cooperative work was actually not spent on the family farm but rather on farms of other cooperative members. This was nevertheless exactly compensated by cooperative work on this farm on several occasions which were not entered in the calculation to avoid error because of duplication.

*243 461 The data from Tables 35 and 36 may be summarized as follow:

221 1. Man labor provided by farm staff.

[592] [464] [231]

Work started June 4, ended February 14, a total of 248 work days.
Total man-hours spent by farm staff -- 5,470½.

2. Man labor provided by piece-workers.

Work started July 19, ended August 30, a total of 10 work days.
Total man-hours spent by piece-workers -- 229.

3. Animal labor provided by buffaloes.

Work started June 4, ended February 13, a total of 112 work days.
Total buffalo-hours -- 2,119.

[TEXT CONTINUED ON PAGE 246]

TABLE 35

SUMMARY OF YEAR ROUND WORK BY CHOM FARM STAFFS
Bangchan, Thailand, 1953

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Steps*	Duration Start	End	Days in work	Man-hrs.
A. Work by Farm Staff				
1. Plowing	June 4	Aug 23	49	918½
2. Harrowing	June 13	Aug 24	28	291
3. Remove weeds after harrow	June 13	Aug 15	25	219½
4. Irrigate and drain	June 4	July 8	21	186½
5. Rolling	June 13	Aug 22	7	42
6. Sow, broadcast	June 18	July 15	13	42½
7. Prepare and repair	July 5	Dec 9	10	106½
8. Prepare bamboo binders	July 17	Aug 27	10	45½
9a. Coop uprooting	July 15	Sept 11	25	127½
9b. Family uprooting	July 17	Sept 8	20	115½
10a. Coop transplanting	July 18	Sept 19	36	267½
10b. Family transplanting	Aug 20	Sept 10	13	125
11. Hauling	July 17	Sept 14	55	733
12. Field inspection	Aug 25	Nov 30	42	87
13a. Care of the plants	July 24	Sept 28	14	114½
13b. Coop weeding	Sept 20	Sept 29	8	86
14. Prepare thresh floor	Nov 29	Jan 27	7	13½
15a. Coop harvesting	Dec 4	Jan 25	44	747½
15b. Family harvesting	Dec 12	Feb 6	18	148½
16. Threshing	Dec 15	Feb 14	43	597
17. Winnowing	Dec 25	Feb 14	9	86½
18. Stacking of straw	Dec 29	Feb 4	2	16
19. Procure grass for buf.	June 14	Nov 27	83	157
20. Supervise coop work	July 22	Jan 24	8	26
21. Entertaining guest workers	July 22	Jan 24	7	158½
Total	June 4	Feb 14	248	5,478½
B. Work by Piece-workers				
1. Coop uprooting	Aug 18	Aug 25	6	24
2. Uprooting	Aug 23	Aug 30	2	45
3. Transplanting	July 19	Aug 2	5	160
Total	July 19	Aug 30	10	229
Grand total	June 4	Feb 14	248	5,707½

[464]

* See details in the section on steps in rice production.

TABLE 36

SUMMARY OF YEAR ROUND WORK BY BUFFALOES ON CHOM FARM
Bangchan, Thailand, 1953

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	Duration Start	End	Days in work	Buf-hrs.
1. Plowing	June 4	Aug 23	49	918½
2. Harrowing	June 13	Aug 24	28	582
3. Rolling	June 13	Aug 22	7	84
4. Hauling	Aug 23	Aug 23	1	8
5. Prepare thresh floor	Nov 30	Dec 4	5	32
6. Threshing	Dec 15	Feb 13	35	494½
Total	June 4	Feb 13	112	2,119

*243
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221 4. Labor requirement per rai.

Our records show that the total area planted to rice was 49 rai.
Therefore, man labor per rai was $\frac{5,707\frac{1}{2}}{49} = 116$ man-hour
And animal labor per rai was $\frac{2,119}{49} = 43$ buffalo-hours.

5. Labor requirement per 100 tang of paddy.

Our records show that a total crop of 2,100 tang of paddy was produced.
Therefore, man labor per 100 tang of paddy was $\frac{5,707\frac{1}{2}}{2,100} \times 100 = 272$ man-hours
And animal labor per 100 tang of paddy was $\frac{2,119}{2,100} \times 100 = 101$ buffalo hours.

The Critical Period in Rice Production

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221 The entire length of rice producing activities, which in the case under study lasted from June 4, 1953 to February 14 1954, may be subdivided into three distinct phases: (1) cultivation and planting season which lasts from the first day of field work to the date when the seedlings have all been transplanted and properly cared for; (2) flooding season which lasts approximately from the date when the water level has risen up over the dikes to the time when the early varieties of rice are ready to be harvested; and (3) harvesting season which lasts from the harvesting time of the early varieties until all varieties have been harvested, threshed, and winnowed.

Bangchan farmers recognize these three distinct phases which are called in Thai na nar (lit., field season), na nam (lit., water season), and na khao (lit., paddy season). They

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4. This would be 290 man-hours per acre.

5. This would be 107½ buffalo-hours per acre.

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know that they must work hard and spend long hours in the field during na nar which is the critical period during which all steps in rice growing must be finished before the deadline set by the end of this phase. Perfect timing of each step is required because one step is a prerequisite to another. Preparation of the seedbed, for example, is the first thing to be done and must be done as soon as possible, for unless this is finished seeds could not be sown and it takes at least thirty days of good care for the seedlings to attain an appropriate growth so that they may be transplanted onto the fields. During the time the seedlings are being nurtured in the seedbed, the fields must be made ready for transplanting at a certain date set by the age of the seedlings. Normally, seedlings may be transplanted at an age between thirty to fifty days. If they are too young, they would be too weak to stand the uprooting and transplanting processes. Yet, if they are too old, the rate of development after transplanting would be retarded and a poor crop would result. The date of transplanting is also conditioned by the general water level, which is sometimes controllable and is sometimes beyond human control. In transplanting, the water level of the parcel should be about 8-10 inches, and should certainly not exceed the height of the seedlings of about 15 inches. Allowance must be made for the expected rain water, since transplanting time coincides with the period of heaviest rainfalls in September. Normally, the young seedlings are able to survive total submergence for two or three days but they will be drowned by a longer submergence.

*243 221 Hence, transplanting should be completed some time before the whole field is inundated. It is seen, then, that this critical period of *na nar* is not only one of physical strain on the part of the farmer but also a period of anxieties.

When the rice plants are well established in the fields, they more or less can take care of themselves, for they grow sufficiently rapidly to keep up with the rising water level unless the rise is abnormally rapid. Thus, *na nam* or the flooding season is a period when farmers have nothing to do except procure grass for the buffaloes. It was earlier indicated that field inspection that was done during this period was actually a pleasure trip to observe the general growth of the rice plants; for even if anything wrong was noticed, nothing could be done about it.

Farmers are busy again when harvesting season starts. Each variety of rice ripens on its exact date and it must be harvested within a day or two. If harvesting is delayed even for a short period of three or four days, the paddy will be over-ripe, resulting in a higher proportion of breakage and hence a lower price. If there is any anxiety at all, it is now over the possibility of rain which may damage the paddy which is left to dry in the field. This is unlikely, however, for the rainy season has just passed. Generally speaking, this [461] is a period of joy rather than anxiety. The major field work -- harvesting -- although one of the most burdensome field operations consuming one-sixth of the total man labor spent on rice production, is largely a cooperative undertaking carried on

*243 under a lively atmosphere. Moreover, the amount of work done
221 depends solely on the amount of human labor utilized. Hence,
461 if the operator wants to finish his harvesting in time when he has not enough available labor, he simply hires more pieceworkers. The situation is different in the critical period of cultivation and planting, when the amount of work done depends not only on the amount of labor utilized but also on the accomplishment of the preceding steps which are governed by water condition, weather condition, available equipment, animal labor as well as man labor.

*243 In the 1953-54 crop year, it was observed that na nar
221 started on June 4 and ended on September 30, na nam lasted from October 1 to December 3, and na khao from December 4 to February 14.

*243 While the figures on total labor requirement in rice
461 production represent valuable information, an earlier discussion in this section has led us to the belief that the mere knowledge that it takes 272 man-hours and 101 buffalo-hours to produce 100 tang of paddy is not enough to demonstrate the labor requirement situation if it is to serve as a guide in problem locating and problem solving. These figures must be further broken down into those required during the critical period and those required in the non-critical period.

*243 Our records show that of the 5,707½ man-hours spent
221 in producing 2,100 tang of paddy on Chom Farm, 3,226½ man-
231 hours were utilized in na nar (June 4 to September 30, 119 days),
461 133½ man-hours in na nam (October 1 to December 3, 64 days),

*243 and 2,347½ man-hours in na khao (December 4 to February 14, 72
221 days). Similarly, of 2,119 buffalo-hours spent on the same
231 production, 1,592½ were utilized in na nar, 24 in na nam, and
461 502½ in na khao. From these data, we may calculate the averages for daily labor utilization in each period as follow:

1. Na nar (119 days)

Total man-hours, 3,226½; daily man-hours, 27.1
Total buf-hours, 1,592½; daily buf-hours, 13.4

Man-hours per rai, 66.
Buf-hours per rai, 32½.

2. Na nam (64 days)

Total man-hours, 133½; daily man-hours, 2.1
Total buf-hours, 24 ; daily buf-hours, 0.4

Man-hours per rai, 2½.
Buf-hours per rai, ½.

3. Na khao (72 days)

Total man-hours, 2,347½; daily man-hours, 32.6
Total buf-hours, 502½; daily buf-hours, 7.0

Man-hours per rai, 47.
Buf-hours per rai, 10.

It is seen that three-fourths of the total buffalo labor was utilized in na nar. This was to be expected, for most of the steps involving buffalo labor were in this period. It is important to observe that buffaloes assumed an active role in practically all steps of land preparation -- plowing, harrowing, and rolling. Human labor, on the other hand, played only a passive part in these steps.

*243 Table 36 shows that buffaloes were utilized in six
231 steps in rice production -- plowing, harrowing, rolling, haul-
461 ing, preparation of threshing floor, and threshing. These steps

*243 may be classified according to the way the animals are used
231 as follow:
461

1. Steps in which buffaloes are always used and in constant proportion to men.

Steps	Proportion of buffaloes to men
Plowing	1 to 1
Harrowing	2 to 1
Rolling	2 to 1

2. Steps in which buffaloes are always used but not necessarily in constant proportion to men.

   Preparation of threshing floor: Four buffaloes are led by one worker to tramp over the dirt floor which was soaked with water on the previous day. While the buffaloes are tramping over the floor, another worker levels the floor with hoe. The number of buffaloes and workers may be more or may be less, and there is no definite proportion between the animals and men.

   Threshing: Four buffaloes are led by one worker to tramp over harvested rice stalks (with paddy still intact) which have been spread over the threshing floor. While the buffaloes are tramping over the rice stalks, two or three other workers separate straw from the threshed paddy with pitchforks.

3. Steps in which buffaloes are not usually used but are sometimes used to minimize human labor when opportunity permits.

   Hauling: Two buffaloes are led by two workers to draw the boat carrying seedlings along the muddy water way. Of a total hauling work of 733 man-hours in 55 work days lasting from July 17 to February 14, buffaloes were used only once on August 23, involving only 8 buffalo-hours.

*243 Since buffaloes are used in the critical period of
221 na nar in the three steps where they must be used and used in
231 constant proportion to men, it is not difficult to see that
461 the field work accomplished in this critical period depends more on buffaloes than on human workers. It was mentioned that

*243 221 231 461 Chom Farm utilized four buffaloes and four regular workers including the operator himself. Supposing that one buffalo is sick, we might expect that the work accomplished in this period would be reduced to three-fourths. On the other hand, if one regular worker is sick, that would not materially affect the amount of work done, for the sick worker would certainly be replaced by a substitute. Even if no extra family worker is available, it would be only a matter of hours that Chom would be able to recruit one more worker among his relatives and neighbors. He could not recruit a temporary service of a buffalo. If more buffalo labor is badly needed, the only alternative is to purchase the animal. Looking from a different angle, if Chom wants to finish plowing and harrowing ahead of the original schedule for fear of an early inundation, he could not accomplish that by simply utilizing more human labor alone. It is thus seen that buffaloes, more than human workers, are the limiting factor in the accomplishment of the field work during the critical period of cultivation and planting season.

Labor Adjustment Devices

*243 221 Rice plants have one unique quality: each variety will mature on a certain exact date no matter how early or how late it is planted.[6] If there were only one variety of rice in existence, this would be a serious handicap to rice growers, for there would certainly be much more demand for labor in

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[6] The exceptions are the very early varieties which mature at the age of about 90-100 days. Ripening dates of these varieties are set only by the length of time they have been planted, regardless of the time of the year.

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harvesting time than could be coped with by the supply for it. Chom Farm, for example, would alone need 916 man-hours in one or two days, during which time approximately the same amount of labor would be needed by each of the other farms. Fortunately, there are in existence hundreds of rice varieties whose maturing dates vary from October to February. These different varieites are grouped into the early, medium, and late varieties according to their ripening dates of October to November, early December to early January, and middle January to middle February, respectively. Usually, the choice of varieties of rice to be grown in a certain locality is so conditioned by local water levels at different periods that a narrower range of selection is forced. Thus, the earliest variety in Bangchan is harvested in early December and the latest in middle February. The terms "early," "medium," and "late" are also arbitrarily used by local people to denote the relative ripening dates of locally grown varieties. Thus, in Bangchan the varieties ripening in early and middle December are known as the early varieites, those ripening between late December and middle January the medium varieties, and those ripening in late January and after the late varieties. It is possible, then, that the same variety may be called an early variety in one place and a medium or even a late variety in another.

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By growing several varieties of different ripening dates, a farmer is able to spread out labor required in harvesting. In the same manner, labor required in uprooting and transplanting is spread out by sowing these seeds at different

*243 221 461 times. Using too many varieties of rice on a farm, however, will complicate the working schedule; and sowing times of these varieties cannot also be spread out too far apart because seedlings should all grow up to the size appropriate for transplanting some time before the deadline set by the water level. It has been observed that most farmers grow from three to six varieties on their farms.

*243 221 461 467 Another efficient device for spreading out labor is that of farmers in a locality organizing themselves into informal cooperative work groups to perform on a mutual help basis such field work which can be best cooperatively done, such as uprooting, transplanting and harvesting. There were three cooperative work groups in Bangchan: (1) _Mu Sapan Yao_, or the Bridge Group, consisting of farm operating families living in the vicinity of the bridge across Bangchan Canal; (2) _Mu Na Wat_, or the Near Wat Group, consisting of families living around Wat Bangchan; and (3) _Mu Bon_, or the North Group, consisting of families living in Upcanal Bangchan. The organization and the system for labor compensation of these various informal work cooperatives will be discussed in the next section.

Cooperative Work

*243 476 There were five kinds of cooperative work in Bangchan -- cooperative uprooting, cooperative transplanting, cooperative harvesting, cooperative weeding, and cooperative pounding of cargo rice. While the first three kinds were important undertakings through which a major part of those rice production

*243 476 steps were carried on, the last two were relatively insignificant and were participated in by few families. All of these five kinds of cooperative work, except cooperative pounding of cargo rice, have been mentioned in the earlier sections of this chapter.

We did not include pounding of cargo rice as a step in rice production, although it was closely related to it. Before or at the beginning of the farm year, when the pressure of the field work was not yet strong, farmers would pound their home-milled rice which was to be consumed during the entire work season. The recent trend has been for farmers to take their paddy to the rice miller who retained a portion of the milled rice and bran as his fee. Nevertheless, there were still some farm families who milled rice needed for their own consumption, contending that it was more economical and that in so doing they could save the much needed bran for their livestock. Home-milled rice, which appears in the form of cargo rice, must be pounded in order that its outer coat may be removed. Farmers found that it was less tedious, and perhaps it was even fun, to do pounding as a group work rather than as a laborious task for an individual family; so they formed a group of say ten families, each sending a representative to participate in group pounding at each member family's home in rotation. Cooperative pounding was more often carried on in the evening. When the work was finished, refreshment was served by the host.

In this section we shall concentrate on the three

*243 major cooperative work -- cooperative uprooting, cooperative
476 transplanting, and cooperative harvesting.

At the outset, it should be understood that cooperative work groups were very informally organized. Although the idea was to mobilize labor to work on each member's farm in rotation, the work obligation was not collective but was purely bilateral -- each farmer receiving help was bound to return the same amount of work to each guest worker individually. There was no such thing as group responsibility.

Supposing Chom wanted help in the uprooting of his early variety, after figuring out how many guest workers he needed for the occasion, he would send word to the group that he wanted, say fifteen workers, on the specified date. Each member approached had to make it known to Chom that he could or could not participate in that cooperative work for Chom. Technically, members were approached individually. There should not be any difficulty, therefore, in limiting guest workers to the required number. Since immediate reply was an ettiquette that was strictly observed, Chom would know not only the number of guest workers but also who would come on the specified date. Another strictly observed rule was that one should participate in a cooperative work only when he was asked to do so. This latter was necessary because there might otherwise be too many guest workers, which meant more future reciprocal work on the part of the host.

Since a farmer grew several varieites of rice, he usually needs help several times in each of the uprooting, transplanting, and harvesting processes. A help unit is called

*243 476 a "*ngarn*" (lit., work), which is one hundred bundles of seedlings uprooted in case of uprooting, one-fourth of a *rai* transplanted in case of transplanting, and also one-fourth of a *rai* harvested in case of harvesting.

The author followed closely every cooperative uprooting which Chom participated. It was found that this operator had bilateral obligations with 20 other members who during the 1953 season had uprooted for him a total of 41 units or 4,100 bundles of seedlings -- 1,400 bundles on July 22, 1,100 bundles on August 3, and 1,600 bundles on August 15. Chom had to make good the reciprocal work of this same amount for all his guest workers according to their individual shares of contribution to him. At the end the records show, however, that Chom himself had contributed only 28 units or had uprooted only 2,800 bundles for fellow members. Although his son Phuan had contributed six more units, the family was still short of seven units. As it actually happened, Chom was away from the village on a house building work in Dhonburi from August 18 to 25. Dkring this period of eight days he was supposed to participate in seven cooperative uprootings. His only substitute, Phuan, could not do the work for him for Phuan was also tied [464] [465] up in cooperative transplanting. Chom therefore arranged for a professional piece-worker to do the seven cooperative uprootings he was committed to at the going rate of 13 baht per 100 bundles uprooted.

Records show that at the end Chom's contribution to each of his twenty fellow members was *individually* equal to the

*243 help he received from each of them (the work by Phuan and the
476 piece-worker was considered as Chom's contribution), the exception being the cases with A and B. Chom had contributed three units to A, receiving only two units from the man; but he had received four units from B, giving him only three units of work. This was settled by transferring Chom's credit with A to B which is the general practice.

*243 There were two professional piece-workers among Chom's
476 twenty fellow members. In fact, there were four such piece-
464 workers in our records of this group of cooperative uprooting, but Chom was bilaterally obligated to only two of them. Perhaps it is necessary to mention at this juncture that each member of a cooperative group had within that group their own circle of members among whom he had bilateral obligatory work. Chom, for example, had a circle of twenty-one within that group of twenty-four. We got this number of twenty-four by listing all the names of the persons (representing families) to whom each of the twenty-one members of Chom's circle had bilateral obligatory work. Most of these names overlapped, and the composite number was found to be twenty-four. It is seen then that the number of members of both a circle and a group depended entirely on which member was used as the basis. It would be misleading, therefore, to state the Mu Sapan Yao Cooperative Uprooting had twenty-four members, for no real size of a cooperative work group exists because of the overlapping nature of various circles within it.

All the four professional piece-workers in this

*243 cooperative uprooting were exceptionally good workers, and
476 this was the reason why they were approached when help was
464 needed. These men accumulated work credits and utilized them
when they were contracted by operators who had not enough
family labor to uproot their seedlings. Chom, for example,
after utilizing his own family labor as well as all the work
credits he earned in cooperative uprooting, still was in short
of labor to uproot his latest varieites on August 22 in which
ten units of work were needed for the estimated 1,000 bundles
[465] to be uprooted. He, therefore, contracted Sa, a fellow member,
to do the job for 130 baht. On that date, Sa called
upon ten members including himself to uproot Chom's seedlings
in his name. So the same old faces appeared on Chom's farm.
Outwardly, this looked like an ordinary cooperative uprooting
on the mutual help basis. In reality, however, it was a business
deal out of which Sa received cash payment from Chom who
in turn received labor. Our records show that Sa had another
earlier contract to uproot 1,700 bundles for another operator,
and the same method of recruiting labor among fellow cooperative
members was used. Since our records show only cooperative
uprootings conducted among this group of twenty-four
members, it was possible that Sa might have a few more contracts
which did not appear in the records.

Ordinarily, farmers do not like to be obligated to professional piece-workers, for they might later be asked to work in return for somebody they do not like. In fact, there was some talk in 1953 among farm operating members on the

*243 possible ways to eliminate the participation of professional
476 piece-workers. From the standpoint of professional piece-
464 workers, however, to get oneself admitted into a cooperative group is a boon to their respective families for job
[465] opportunity would be assured to them. This is the reason why Sa was able to earn 2,000 baht in 1953 while most of his fellow piece-workers' earnings were as low as 300 or 600 baht.

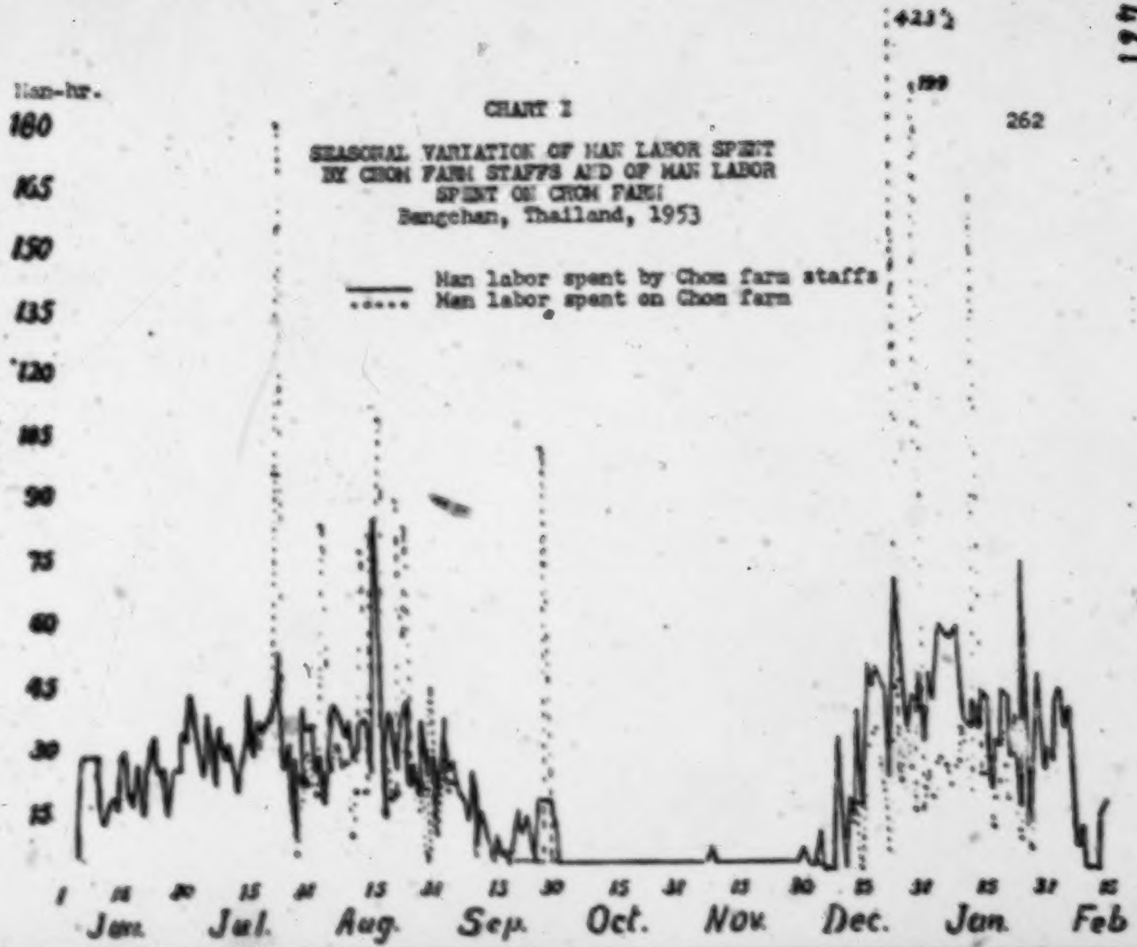
*243 The same principle of labor reciprocity held in the
476 other kinds of cooperative work, which also involved cash payment in the end to professional piece-workers who served as clearing agents to settle the balances of work credits. Generally speaking, such balances were more in case of cooperative transplanting than cooperative uprooting, and the same were even higher in the case of cooperative harvesting. This was to be expected because transplanting involved about double the amount of labor spent on uprooting, and harvesting alone required about a tenth more than the combined labor requirement of these two operations.

*243 Chart 1 shows both man-labor spent by Chom farm staffs
461 and man-labor spent on Chom Farm, the former being represented
476 by the solid line and the latter by the dotted line. On the basis of equal reciprocity of labor, these two should be technically equal in total magnitude. They differed, however, in their daily distribution. It is seen that the two lines coincide during the periods from June 4 to July 14, from September 30 to December 3, and from January 26 to February 4, when there was no cooperative activity. During the periods from July 15

243 to September 29 and from December 4 to January 25, these two
461 lines diverge from each other. Although both fluctuate greatly,
476 it is readily seen that fluctuation of the dotted line representing labor spent on Chom's Farm is much more than that of the solid line representing labor spent by Chom farm staffs. This shows that by adopting cooperative work device Chom was able to spread out the work of his farm staffs although the daily labor requirement on his farm still remained highly fluctuating.

CHART I

SEASONAL VARIATION OF MAN LABOR SPENT BY CHOM FARM STAFFS AND OF MAN LABOR SPENT ON CHOM FARM
Bangchan, Thailand, 1953



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7: Janlekha X-4,5 (1948-1953)1956 AO7 Central Thai AO7
Bangchan

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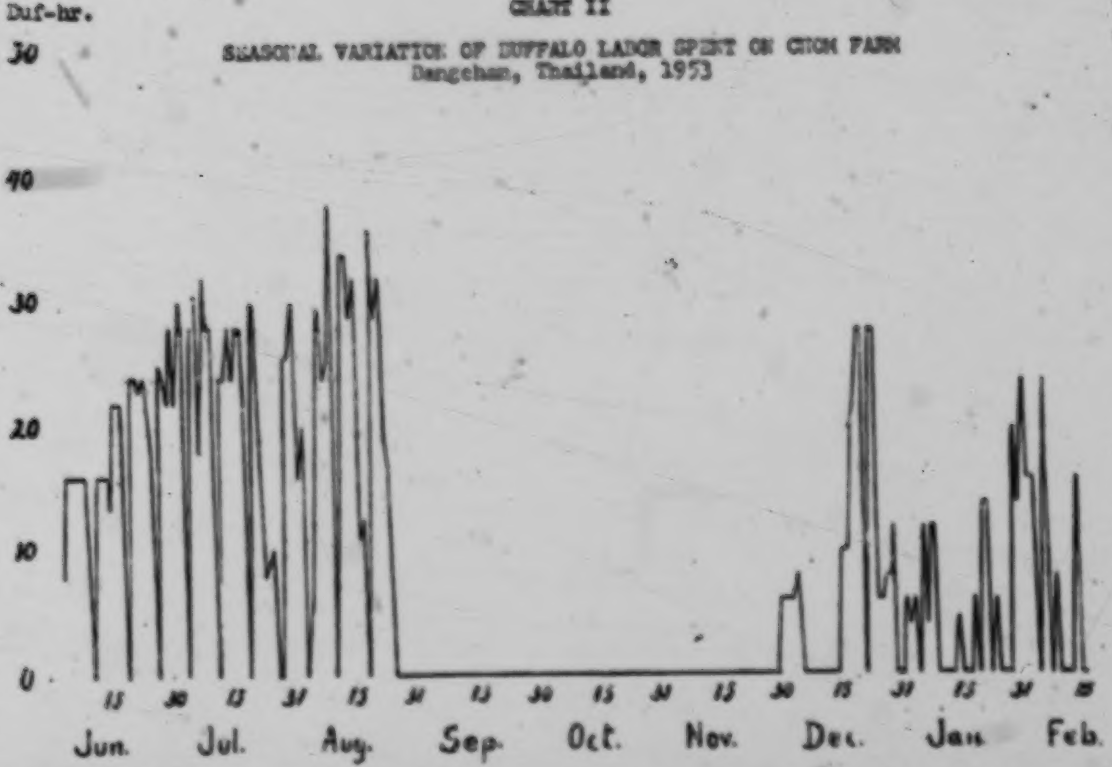
CHART II

SEASONAL VARIATION OF BUFFALO LABOR SPENT ON CHOM FARM
Bangchan, Thailand, 1953



*243
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TABLE 37

DAILY LABOR SPENT BY CHOM FARM STAFFS
Bangchan, Thailand, 1953

Date	Animal labor	Human labor		
		On farm	On coop. work	Total
	buf-hr	man-hr	man-hr	man-hr
Jun 4	8	24	--	24
5	16	28	--	28
6	16	28	--	28
7	16	28	--	28
8	16	28	--	28
9	16	28	--	28
10	8	12	--	12
11	--	16	--	16
12	16	18	--	18
13	16	15½	--	15½
14	16	27½	--	27½
15	13½	29	--	29
16	22	19½	--	19½
17	22	16½	--	16½
18	20	26½	--	26½
19	--	14½	--	14½
20	24	25	--	25
21	24	24	--	24
22	23	33	--	33
23	24	24	--	24
24	21½	25½	--	25½
25	18	14	--	14
26	--	18½	--	18½
27	25	25	--	25
28	24	25	--	25
29	22	34½	--	34½
30	28	32	--	32
July 1	22	43	--	43
2	30	38	--	38
3	27½	30	--	30
4	--	23	--	23
5	28	38	--	38
6	30½	32½	--	32½
7	18	21	--	21
8	32	35	--	35
9	28	28	--	28
10	28	3-½	--	30½

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TABLE 37 (Cont.)

DAILY LABOR SPENT BY CHOW FARM STAFFS

Date	Animal labor buf-hr	Human labor On farm man-hr	Human labor On coop. work man-hr	Human labor Total man-hr
July 11	--	23½	--	23½
12	24	20	--	20
13	24	26½	--	26½
14	28	31	--	31
15	24	38	5½	43½
16	28	27½	--	27½
17	28	36	--	36
18	22	30	5	35
19	--	36	--	36
20	30	37½	--	37½
21	28	37	4½	41½
22	19	46½	5	51½
23	8	20½	4½	25
24	9	31	--	31
25	10	16	--	16
26	--	4	4	8
27	--	17	4½	21½
28	25½	27½	12	39½
29	26	28½	9½	38
30	28	21	13½	34½
31	30	35	--	35
Aug 1	16	18	6	24
2	20	21½	7	28½
3	--	7½	8½	16
4	5	17	9½	26½
5	22½	24½	16	40½
6	29½	29½	10½	40
7	24	30½	6½	37
8	25½	25½	7½	33
9	38	26	10½	36½
10	--	8	19½	27½
11	28	16	13	29
12	34	19	16½	35½
13	34	25½	12	37½
14	29	19	7½	26½
15	32	81½	4	85½
16	11	67½	4	71½
17	12½	35	5½	39½
18	--	4½	8	12½
19	36	38	--	38
20	29	17½	8½	26

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TABLE 37 (Cont.)

DAILY LABOR SPENT BY CHOM FARM STAFFS

Date	Animal labor	Human labor		
		On farm	On coop. work	Total
	buf-hr	man-hr	man-hr	man-hr
Aug 21	32	18	6½	24½
22	19	28	7	35
23	17	41½	--	41½
24	8	16	4½	20½
25	--	19	7	26
26	--	14½	3½	18
27	--	21	15	36
28	--	4	16	30
29	--	2	22½	24½
30	--	14	14	28
31	--	8	4	12
Sept 1	--	8	9	17
2	--	27½	10	37½
3	--	12½	11½	24
4	--	19	7	26
5	--	21½	3½	25
6	--	19	--	19
7	--	17	--	17
8	--	12	--	12
9	--	24	--	24
10	--	6	--	6
11	--	11	3	14
12	--	9	--	9
13	--	6	--	6
14	--	2	--	2
15	--	8	--	8
16	--	3½	--	3½
17	--	4½	--	4½
18	--	2	--	2
19	--	2	3½	5½
20	--	2	12	14
21	--	2	7	9
22	--	2	11	13
23	--	2	7	9
24	--	2	--	2
25	--	2	14	16
26	--	2	14	16
27	--	2	14	16
28	--	16	--	16
29	--	2	7	9
30	--	2	--	2

TABLE 37 (Cont.)

DAILY LABOR SPENT BY CHOM FARM STAFFS

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Date	Animal labor	Human labor		
	buf-hr	On farm man-hr	On coop. work man-hr	Total man-hr
Oct 1	--	2	--	2
2	--	2	--	2
3	--	2	--	2
4	--	2	--	2
5	--	2	--	2
6	--	2	--	2
7	--	2	--	2
8	--	2	--	2
9	--	2	--	2
10	--	2	--	2
11	--	2	--	2
12	--	2	--	2
13	--	2	--	2
14	--	2	--	2
15	--	2	--	2
16	--	2	--	2
17	--	2	--	2
18	--	2	--	2
19	--	2	--	2
20	--	2	--	2
21	--	2	--	2
22	--	2	--	2
23	--	2	--	2
24	--	2	--	2
25	--	2	--	2
26	--	2	--	2
27	--	2	--	2
28	--	2	--	2
29	--	2	--	2
30	--	2	--	2
31	--	2	--	2
Nov 1	--	2	--	2
2	--	2	--	2
3	--	2	--	2
4	--	2	--	2
5	--	2	--	2
6	--	2	--	2
7	--	5	--	5
8	--	2	--	2
9	--	2	--	2
10	--	2	--	2

TABLE 37 (Cont.)

DAILY LABOR SPENT BY CHOM FARM STAFFS

*243
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Date	Animal labor	Human labor		
		On farm	On coop. work	Total
	buf-hr	man-hr	man-hr	man-hr
Nov 11	--	2	--	2
12	--	2	--	2
13	--	2	--	2
14	--	2	--	2
15	--	2	--	2
16	--	2	--	2
17	--	2	--	2
18	--	2	--	2
19	--	2	--	2
20	--	2	--	2
21	--	2	--	2
22	--	2	--	2
23	--	2	--	2
24	--	2	--	2
25	--	2	--	2
26	--	2	--	2
27	--	2	--	2
28	--	2	--	2
29	--	2	--	2
30	6	5	--	5
Dec 1	6	2½	--	2½
2	6	1½	--	1½
3	6	1½	--	1½
4	8	2	7	9
5	--	--	--	--
6	--	--	--	--
7	--	--	--	--
8	--	25½	--	25½
9	--	33	--	33
10	--	--	--	--
11	--	12½	4½	17
12	--	8	5	13
13	--	16	22	38
14	--	--	15	15
15	10	17	16	33
16	10	30	19	49
17	20	33	10	43
18	22	34	15	49
19	28	24½	21	45½
20	28	19½	24	43½

TABLE 37 (Cont.)

DAILY LABOR SPENT BY CHOM FARM STAFFS

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Date	Animal labor buf-hrs	Human labor On farm man-hr	Human labor On coop. work man-hr	Human labor Total man-hr
Dec 21	--	4½	18	22½
22	28	30½	21	51½
23	28	43½	27½	71
24	6	40	8	48
25	6	21	18½	39½
26	8	34½	--	34½
27	8	24	18	42
28	12	17½	24	41½
29	--	14½	24	38½
30	--	47	--	47
31	--	14½	16	30½
Jan 1	6	23	24½	47½
2	4	17	24	41
3	6	26½	24	50½
4	--	27½	32	59½
5	12	25½	32	57½
6	4	20	36	56
7	12	25½	32	57½
8	12	26½	32	58½
9	--	34	15	49
10	--	19½	16	35½
11	--	25	9	34
12	--	23½	18	41½
13	--	23½	10	33½
14	4½	32	11	43
15	--	26	16	42
16	--	10	9	19
17	--	16½	15	31½
18	6	21	9½	30½
19	--	33	10	43
20	14	25½	16	41½
21	14	17½	10	27½
22	--	32½	5	37½
23	6	5½	9½	15
24	--	74½	--	74½
25	--	2½	8½	11
26	--	22	--	22
27	--	29½	--	29½
28	20	47½	--	47½
29	14	31	--	31
30	20	24	--	24
31	24	29	--	29

TABLE 37 (Cont.)

DAILY LABOR SPENT BY CHOM FARM STAFFS

*243
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Date	Animal labor Buf-hrs	Human Labor On farm man-hr	 On coop. work man-hr	 Total man-hr
Feb 1	16	25½	--	25½
2	16	39½	--	39½
3	14	43½	--	43½
4	--	34	--	34
5	24	38½	--	38½
6	8	22	--	22
7	--	5	--	5
8	8	10½	--	10½
9	--	--	--	--
10	--	--	--	--
11	--	--	--	--
12	--	--	--	--
13	16	12½	--	12½
14	--	16	--	16

CHAPTER VI

FARM ORGANIZATION AND MANAGEMENT

*128 241 Broadly speaking, a farm is one or more tracts of land held or operated as a unit for the production of agricultural products.[1] The subject of farm organization and farm management is usually treated under the more general term "farm management". A recognition of the distinction between these two functions of the farm operator is necessary. Organization refers specifically to the function of creating the general scheme or plan of production, whereas management refers to the function of putting the scheme into operation and of making those adjustments in the business which are necessary in order to obtain the maximum economic returns from the farm business as a whole.[2]

*243 433 44 Limited Role of Bangchan Operators

1. Limited role in organization: Discussions in the preceding chapters have indicated that at the present stage of technological development Bangchan operators have really not much choice in creating the general scheme or

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[1] H. C. M. Case and Paul E. Johnston, Principles of Farm Management, J. B. Lippincott Company, Chicago, 1953. pp. 466.

[2] G. W. Forster, Farm Organization and Management (New York: Prentice-Hall, Inc., 1950), p. 19.

*243 plan of production. If a crop is to be produced for market
433 in Bangchan, in all probability it must be rice. Since
44 crop rotation is not practiced, there is no need for decision
making as to the kinds of crops which are to be grown
235 other than rice. The operator may have to decide how many
chickens he should keep, but he normally settles on a flock
of ten to fifteen, for it would be too much a burden to
keep a larger flock and fewer heads of poultry would not
*243 be worth the time. The production function, or the choice
433 of the best factor combination, also does not call for any
serious consideration. For it has been observed that at
the present stage of technological development of rice production
in Thailand or even in the whole region of Southeast
Asia the marginal product of labor has already approached
zero. In other words, more labor applied to the same area
under the same method of planting would not materially increase
the crop harvested. It has been claimed, though,
that a larger crop may be expected from the same parcel
planted to broadcast rice by changing the planting method
to the more labor intensive transplanting system. This claim
has never been substantiated, however, by any systematic
comparative study. Besides, the transplanting method is
so universally adopted in Bangchan that it can almost be
taken for granted to be the one in use by any rice farmer.
Moreover, it was mentioned earlier that the planting method
is not optional with the farmer but is governed by topography,
expected condition of water supply, and availability of labor.

*243 433 The preliminary study in 1948-49 shows that a well equipped farm has a higher crop yield than a poorly equipped farm. Yet the issue here is not one of deliberately choosing the best factor combination among several others. Rather, the lowly capitalized farm is so equipped because of the failure on the part of the operator to command enough capital to meet the required standard factor combination. It is seen, then, that if the operator had enough resources he would follow the established pattern of farm capitalization, thus there appears also to be not much choice either in the selection of the kinds and amount of farm equipment.

*243 242 433 The operator may decide on whether or not fertilizer is to be used, and this will certainly affect factor combination. It has been observed, however, that Bangchan farmers have never applied any commercial fertilizer to their rice fields of which plant nutrients have been replenished only by the annual inundation and natural deposition of buffalo manure. The reason for the rice farmer's disinclination to fertilization as given by the Thai Ministry of Agriculture was the relatively high price of commercial fertilizers.[3] In fact, progress reports on fertilizer, a study conducted by the ministry, indicate the possibility of profit from proper application of commercial fertilizer on rice fields, but operating on a narrow margin the rice farmer simply could not afford the risk. Uncertainty due to weather and

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[3] Ministry of Agriculture, Problems in Thai Agriculture, op. cit.

*243 water conditions is also a major factor militating against
433 investment on fertilizer. As it happens, therefore,
fertilization does not prevail in the decision making of
Bangchan operators.

If the operator has any positive role at all in the production plan, it is in the selection of rice varieties. This topic has already been dealt with in the section on labor adjustment devices of the preceding chapter.

*243 Finally, one of the most important organizational
433 decisions involves the choice of the size of the farm. It
423 has been observed that poverty in agriculture is as much a
problem of farm size as of any other single factor. Most frequently, farm size is spoken of in terms of acres -- the land input. Although this measure is generally not sufficient, it serves the purpose quite well in single-crop farming areas such as Bangchan and all other rice areas in this country. In this study, therefore, farm size will be expressed in rai (two-fifths of an acre) devoted to rice.

Generally speaking, if the Bangchan operator is free
[464] to choose the farm size that suits him best, his decision
[592] will be based almost entirely on the size of labor force
under his command, which in turn depends largely on the size
of his family labor. As it happens, most operators are not
*243 free to do so. It was mentioned in the section on land tenure
427 of Chapter III that it was only the landlord-operator group,
464 actually 11 out of a total of 216 farm operators in Bangchan,
423 that had demonstratively shown sign of land saturation and

*243 427 464 423 thus could freely choose the proper size of their farms.

To be sure, some of the other 205 operators in the land scarce group could rent in enough additional parcels to make an efficient-sized farm. The preliminary study in 1948-49, however, reveals that of 104 farms under study 87 were under-sized. The point we want to make in this section is that there are considerations other than economic interest which preclude the attainment of a most favorable farm size by some of these land scarce operators. In the study of labor utilization on Chom Farm, it was seen that preparation of the fields was finished long before the deadline, indicating that the land input could be increased or labor input could be decreased. If Chom wanted to rent in an additional parcel of five rai, the problem presented would not be simple. In the first place, all rice land in the village had been filled up, so Chom's additional parcel had to be one that had been operated by a neighbor of his. [597] Unless this neighbor had expressed an intention to quit this parcel, conscience alone would prevent Chom from outbidding the other person for the parcel. Second, although lease of land was on a one-year basis, in practice the landlord usually rented his lands continuously to the same tenants. If the landlord wanted to operate a certain parcel himself, the former tenant might think that it was reasonable enough to abandon the parcel. But it was inconceivable that he should leave the parcel so that another tenant could operate it. Third, the additional parcel should not be too far away

*243 423 464 427 from the homelot because much time and energy would be wasted in daily walking to the field.

It would seem, then, that most rice farm operators had little opportunity to obtain a farm size they thought best and had to accept what was due them. Thus, their role in choosing the size of business, which is the most important role, is also limited.

*243 221 433 2. Limited role in management: Inasmuch as management refers to the function of putting the scheme into operation, Bangchan operators certainly have a large part to play. A good rice crop depends largely on the relationship between the height of the young plant and the rising water level. Since the rise of water level is highly seasonal, depending on local rains as well as rains elsewhere that affect the general water level, scheduling the farm work and seeing to it that the schedule is followed becomes a most important function of the farm operator.

*243 433 Management, however, refers also to the function of making those adjustments in the business which are necessary in order to obtain the maximum economic returns from the farm business as a whole. Inasmuch as this latter function is concerned, the operator's role has been limited as in the case of the organizational function. As previously stated, under the present stage of technological development in rice production in this country, not only the points of diminishing return of both labor and capital (farm equipment, at the present state of technical development in the village)

*243 433 have been long passed but also the marginal products of these two factors have already approached zero. Under this condition, the function of making adjustments of the farm operator is reduced to the minimum.

It is seen, then, that the farm operator's role in organization and management has been under Bangchan condition, reduced to scheduling and supervising with the possible exception of choosing rice varieties. Good management, in the village sense of the term, means finishing the planting work in time or well before the deadline set by water condition. This is likely to continue to be the case until there is such a radical change in the rice producing industry of this country as, for example, an introduction of a new equipment which commercially adopted, an availability of commercial fertilizer at a reasonably low price, an efficient method of soil amendment that allows another crop to be grown in rotation with rice, or a dependable water control system to the extent that damages due to flood or drought can be altogether eliminated.

*243 Elements of Agricultural Production

433 *128 The four elements of agricultural production -- land, labor, capital (farm equipment and materials), and management -- have all been discussed at various stages of this dissertation. In this section, these elements will be brought back into discussion again insofar as they have bearing on farm organization.

*243 1. Land: This element represents 22 per cent of
433 the total cost of producing paddy (Table 38). Of this,
[427] 15 per cent is actual payment for explicit rent while 9
per cent is assessed value of implicit rent.

Among the cost items in Table 38, cash expenses include actual rent (13%), wages for pieceworkers (3%), wages for hired laborers (3%) and seeds and materials (6%), while imputed expenses include implicit rent (9%), value of family labor (31%), value of the operator's labor (13%), depreciation (10%) and interest on investment (11%). It is seen that cash expenses comprise only 25 per cent, while imputed expenses comprise as high as 75 per cent of the total cost.

In view of the high proportion of imputed expenses, the method adopted in the imputation will be explained here.

[427] 1. Rent: Going rate for 1948-49 of 6.2 tang (49
[435] baht) per rai was used.

[592] 2. Value of family labor: Labor requirement based on
[461] acreage was first calculated, using the standard factor of
13.4 adjusted rai to one fully employed worker (this was the
1949 average for farms with regularly hired laborers on which
[435] workers were assumed to be fully employed). When the labor
requirement in terms of number of fully employed laborers
needed was known, imputed family labor cost was calculated
at the going wage rate for the year of 1,600 baht (1,000
baht cash and 600 baht of food privilege).

3. Value of the operator's labor: In addition to

[TEXT CONTINUED ON PAGE 280]

TABLE 38

COST OF PRODUCING PADDY ON 104 SAMPLE-FARMS*
Bangchan, Thailand, 1948

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Items	Total	Average	Per cent
	baht	baht	
1. Rent of land			
a. Actual	99,501.63	957	13.1
b. Assessed	70,604.54	679	9.3
Total	170,106.17	1,636	22.4
2. Labor			
a. Hired labor	24,757.00	238	3.3
b. Piecework	25,696.00	247	3.4
c. Assessed value of family labor	338,839.00	3,258	44.6
Total	389,292.00	3,743	51.3
3. Capital			
a. Seed and material	42,574.77	409	5.6
b. Depreciation	73,236.50	704	9.6
c. Interest on investment	84,590.22	813	11.1
Total	200,401.49	1,926	26.3
Grand Total	759,799.66	7,305	100.0

Total crop. . . . . . 112,415 tang of paddy
Total acreage . . . 3,527.75 rai

Average cost per tang 6.76 baht
Average cost per rai 215 baht

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a[128] * The cost figure in this table is slightly higher than the one given in the preliminary report because of the inclusion of the value of operators' labor.
The value of the operator's labor is estimated at 1,000 baht per year for those operating farms of 10 rai or more, and at 500 baht for those operating under 10 rai.

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[435] the value of family labor, the cost of managerial service of the operator of 1,000 baht was arbitrarily charged for farms with the size of 10 rai or over. For farms under 10 rai, only 500 baht was arbitrarily charged as the cost of managerial service.

4. Depreciation: From the original cost of each item of equipment (including buffaloes) was deducted its residual value at the termination of its service, and the result was divided by the expected length of service in years of the equipment.

5. Interest on investment: The rate of 15 per cent per year was arbitrarily chosen. This was the maximum legal rate, and was also a minimum rate of return which any person in Bangchan might reasonably expect from his money if he chose to lend it out at any moment.

*[128] Since much of these imputed expenses were arbitrarily chosen, the cost of producing paddy might naturally vary widely according to the assigned value of each item. Our cost of production figure, then, will be more meaningful, if the amounts of these arbitrarily imputed values are constantly kept in mind.

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423 Farms in Bangchan are composed of from one to four parcels of land. The characteristics of this fragmentation are shown in Table 39. The size of a parcel ranges from one rai to 65 rai, averaging 18.8 rai. Fragmentation obviously brings about a waste of considerable time and energy spent in going from one parcel to another, and thus an increase in

[TEXT CONTINUED ON PAGE 282]

TABLE 39

FRAGMENTATION OF WORKING AREA OF 104 SAMPLE FARMS
Bangchan, Thailand, 1948

Description of Farm	Frequency	Total Number of Parcels	Total Area	Average Area of One Parcel
			rai	rai
One-parcel farms	48	48	1,128.00	23.5
Two-parcel farms	35	70	1,272.75	18.2
Three-parcel farms	14	42	745.25	17.7
Four-parcel farms	7	28	381.75	13.6
Total	104	188	3,527.75	--
Average	1	1.8	33.9	18.8

*243 labor cost. Most farmers must go by foot or boat to work
433 at places ranging from a hundred meters to two kilometers
461 from home. This waste is the more serious during the period
423 of preparation of the fields at the beginning of the season when the water level in the canals is not high enough to permit the effective use of a boat.

*243 Table 40 shows the frequency distribution of areas
178 worked by Bangchan operators in 1948 and 1952. It is seen
423 that in both years work areas concentrate in the size groups between 10 to 40 rai, averaging 34.2 rai for 1948 and 31.7 rai for 1952. It is seen also that the work areas of 1948 have a wider range than that of 1952. There were 30 farms in 1948 whose areas were 40 rai and over, while the number of such farms was 28 in 1952.

Table 41 shows that of 96 continuing farms, 20 have increased their size during the five years period, 40 have decreased their size, while 35 farms have the same size throughout.

*243 2. Labor: This element represents 51 per cent of
433 the total cost of producing paddy (Table 38). Of this,
46 only a small fraction is actually paid for -- 3.3 per cent to hired laborers and 3.4 per cent to pieceworkers. The bulk of labor is supplied by family workers (including the operator himself) whose labor value is assessed at 44.6 per cent of the total cost of producing paddy.

It is seen in Table 42 that the number of adjusted rai per worker is only 9.4 for farms which used only family

[TEXT CONTINUED ON PAGE 286]

TABLE 40

FREQUENCY DISTRIBUTION OF AREAS WORKED BY 96 OPERATORS
Bangchan, Thailand, 1948 and 1952

243
178
423

Class in Rai	Number of Farms 1948	 1952
110 to under 120	1	0
100 to under 110	0	0
90 to under 100	1	0
80 to under 90	4	2
70 to under 80	3	3
60 to under 70	5	7
50 to under 60	6	7
40 to under 50	10	9
30 to under 40	18	22
20 to under 30	22	19
10 to under 20	16	18
Under 10	10	9
Total	96	96
Mean	34.2 rai for 1948 31.7 rai for 1952	
Median	30.3 rai for 1948 31.1 rai for 1952	

TABLE 41

CHANGES IN AREAS WORKED BY 96 OPERATORS
Bangchan, Thailand, 1948-52

243
178
423

Description of Farms	Number of Farms
Same size*	35
Increased size	20
Decreased size	41
Total	96

---

* To take care for reporting errors and errors due to confusion over planted areas and harvested areas, a margin of 2 rai is allowed. Hence, farms reporting size changes of two rai and under are considered to have no change in size.

*243
461
464
592

TABLE 42

DISTRIBUTION OF FULL TIME LABOR FORCE OF 104 FARMS
Bangchan, Thailand, 1948

Condition of Regular Labor Force	Number of Farms	Number of Workers	Adjusted* Areas	Adjusted Rai Per Man
			rai	rai
Farms without hired laborer				
One family worker	8	8	131.75	16.5
Two family workers	28	56	497.50	8.9
Three family workers	25	75	646.25	8.6
Four family workers	20	80	747.50	9.3
Five family workers	10	50	487.25	9.7
Six family workers	--	--	--	--
Seven family workers	1	7	75.50	10.8
Eight family workers	1	8	83.00	10.4
Nine family workers	--	--	--	--
Ten family workers	1	10	107.50	10.8
Sub-total	94	295	2,776.25	--
Average	1	3.1	29.50	9.4
Farms with hiredlaborers				
a. With one hired laborer				
One family worker	1	2	58.50	29.2
Two family workers	5	15	177.50	11.8
Five family workers	2	12	108.00	9.0
b. With two hired laborers				
One family worker	1	3	70.00	23.3
c. With three hired laborers				
Two family workers	1	5	80.00	16.0
Sub-total	10	37	494.00	--
Average	1	3.7	49.50	13.4
Grant total	104	332	3,270.25	--
Average	1	3.2	31.50	9.8

* An "adjusted" rai equals one transplanted rai or two broadcast rai. Cultivation of one rai by the broadcasting method requires roughly only one-half the labor involved in the transplanting method.

*243 labor, while the corresponding number is 13.4 for farms
433 which used regularly hired laborers along with family
46 workers. We make the assumption that farms with hired laborers had full utilization of labor (otherwise there would be no need to hire an extra laborer) and that farms without any hired labor might or might not have full utilization of labor. The significantly larger area per worker for farms demonstrating full utilization of labor than that of farms which did not demonstrate such condition indicates that there was latent underemployment in terms of rai per worker on some Bangchan farms. Table 43 suggests that there might be as many as 87 of such farms out of 104 sample-farms in Bangchan in 1949.

While full utilization of labor is fairly well indicated by employment of regular hired laborers, it is not necessaryily the case that the family labor of farms which employ some pieceworkers had been fully utilized except during the peak period when the pieceworkers were employed. It has been observed that many of the apparently undersized farms had to engage some pieceworkers to do some uprooting, transplanting, and harvesting because the labor requirements for these steps are so highly seasonal that such labor adjustment devices as planting of several varieties of rice and cooperative work system could not amply spread the work of the family. The extra work sought from the pieceworkers is usually small, however.

TABLE 43

FREQUENCY DISTRIBUTION OF ADJUSTED AREA WORKED PER MAN OF 104 FARMS
Bangchan, Thailand, 1948

*243
46

Class Intervals of Adjusted Rai Per Man	Number of Farms	Cumulative Number of Farms
rai		
Under 2.5	1	1
2.5 to under 5.0	11	12
5.0 to under 7.5	29	41
7.5 to under 10.0	18	59
10.0 to under 12.5	21	80
12.5 to under 15.0	5	85
15.0 to under 17.5	9	94
17.5 to under 20.0	3	97
20.0 to under 22.5	1	98
22.5 to under 25.0	2	100
25.0 to under 27.5	2	102
27.5 to under 30.0	1	103
30.0 to under 32.5	1	104
Total	104	

Note: It is seen from this table that there are 80 farms whose adjusted area worked per man are less than 12.5 rai.

By interpolation, it may be estimated that there are 7 farms whose adjusted area worked per man falls between 12.5 and 13.3 rai.

We can say, then, that there are 87 farms whose adjusted area worked per man are less than 13.4 rai -- the average for farms with hired laborers, or farms which have demonstratively shown sign of full utilization of labor.

288

*243
231
461

Buffaloes are considered as a kind of farm equipment, so the cost of buffalo labor appears under the item of cost of equipment. Buffalo labor is, however, so closely associated with man labor that it seems to be more appropriate to discuss it here.

It has been pointed out that the accomplishment of farm work during the critical period depends largely on buffalo labor. Farmers fully realize the importance of this draft animal, which is always given good treatment. Even in the busiest season of field preparation, when farmers work from dawn to dusk seven days a week, the buffalo has a full holiday each week (on Wan Phra, the Buddhist holiday) and has a four-hour noon recess, usually from 10 a.m. to 2 p.m., on work days.

*243
433
435

3. Farm equipment and supplies: This element represents 26 per cent of the total cost of producing paddy. Our records show that in 1948 the total value of farm equipment and materials of the 104 sample-farms amounted to 559,626 baht, averaging 5,381 baht per farm, and ranging from 443 to 16,733 baht. The frequency distribution of the value per farm of farm equipment and materials is shown in Table 44.

* [128]

Table 45 shows the frequency distribution of the value per rai of farm equipment and materials which ranges from 34 to 518 baht, averaging 159 baht. It is seen, in spite of this rather wide range, that three-fifths of the value per rai concentrate in the interval between 100 and 200 baht per rai.

TABLE 44

FREQUENCY DISTRIBUTION OF THE VALUE PER FARM OF EQUIPMENT AND MATERIALS OF 104 FARMS

Bangchan, Thailand, 1948

*243
433
435

Class Intervals	Number of Farms	Average Per Farm
baht		
Under- 1,000	2	460
1,000- 1,999	12	1,477
2,000- 2,999	8	2,596
3,000- 3,999	17	3,490
4,000- 4,999	11	4,511
5,000- 5,999	15	5,473
6,000- 6,999	11	6,380
7,000- 7,999	9	7,380
8,000- 8,999	4	8,307
9,000- 9,999	4	9,357
10,000-10,999	6	10,520
11,000-11,999	4	11,584
12,000-and over	1	16,733
Total	104	88,268

Mean . . . . 5,381 baht

Median . . . . 5,055 baht

TABLE 45

FREQUENCY DISTRIBUTION OF THE VALUE PER RAI OF EQUIPMENT AND MATERIALS OF 104 FARMS
Bangchan, Thailand, 1948

*243
433
435

Class Intervals	Number of Farms
baht	
Under- 50	1
50 - 99	11
100 --149	38
150 - 199	23
200 - 249	13
250 - 299	8
300 - 349	22
350 - 399	3
400 - 449	2
500 - 549	1
550 - 599	2
Total	104

Mean . . . . .159 baht

Median . . . . . . .152 baht

*243
433 It is often said that the underdeveloped areas are characterized by over-population and under-capitalization. While there is much truth in this, there is also a danger of oversimplification. Capital here includes a relatively small physical in put, but it is actually large in terms of cost per unit.

4. Management: We did not assign any value to the operator's managerial work; only the assessed value of his labor -- 1,000 baht annually, or 500 baht annually if he operated only 10 rai or less -- was included in the item of assessed value of family labor.

The role of management has already been discussed in the previous section of this chapter.

It has been observed that management is furnished by the Bangchan operator and his wife, and in some cases
*243 their grown-up sons and daughters. Not a single case has
423 been known where the management on rented farm is shared
427 with the landlord or his agent. It is interesting to note that the absence of the landlord's part in management was exhibited in an environment that should normally create and regenerate his influence over the tenant -- the condition of land scarcity, the Thai respect for one's betters, and the ease in communication between the landlord and the tenant.

Actually, the absence of the landlord's part in management does not necessarily mean that he has no influence over his tenants. On the contrary, landlords in Thailand

x 243 are as influential as most landlords in other countries.
423 It is the limited role of organization and management, which
427 has already been discussed, that has precluded their advisory
contributions.

CHAPTER VII

ECONOMIC CONDITION OF FARM OPERATORS

121 Income performs two basic functions in the social economy: (1) as incentives to resource owners, income affects the use to which resources are put in production; (2) as purchasing power in the hands of families, income affects the well-being of people. This functional dichotomy is significant because it has its foundation in the primary values that motivate people in our society. The first function is oriented toward production, the second toward welfare.[1]

Western economists have been all too prone to restrict their analyses to the first of these two functions. In the East, as already indicated in the introductory chapter, commercialization of agriculture was started only in the latter phase of Western colonial regime in the area, more specifically after the construction of the Suez Canal. Even now, the transformation from the age-old self-sufficing economy into a commercial economy has not been completed because the fabrics of the traditional society have not been reshaped and the traditional outlook still prevails. Here

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[1] Theodore W. Schultz, Production and Welfare of Agriculture (New York: The Macmillan Company, 1949), p. 21.

121 lies the main problem of Southeast Asia -- the problem basically of transition. Writing in 1949, Paul Mus rightly states: "The traditional world was not dead; it still held sway in the countryside. A state of affairs, in which the people's livelihood is calculated in terms of one world and their taxes in those of quite another, cannot endure."[2]

*128 433 Degree of Self-sufficiency

During 1952-53, a consumption study was made on 106 sample-farms, which include the 96 continuing sample-farms and 10 new farms brancing off from the original sample-farms of 1948. Details of this consumption study will be discussed in the section on ordinary household expenses later in this chapter. For the purpose of the present discussion, Table 46 -- frequency distribution of degree of self-sufficiency of those 106 sample-farms -- is here introduced. By degree of self-sufficiency is meant the proportion of the value of home-grown products expressed as a percentage of the total value of annual consumption. Quantitatively speaking, it is seen that Bangchan farm families produce more than half of the things they ordinarily consume.

24 433 [592] 000 However, the number of different products consumed which are produced by the family can be counted with the fingers of one H[illegible] These are rice, fish, eggs, fruit and vegetables. On the other hand, there are scores of items

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[2] Paul Mus, The Role of the Village in Vietnamese Politics.

[TEXT CONTINUED ON PAGE 296]

*243
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TABLE 46

FREQUENCY DISTRIBUTION OF DEGREE OF SELF SUFFICIENCY MEASURED IN MONETARY VALUE OF 106 SAMPLE-FARMS
Bangchan, Thailand, 1952

Class Intervals in Per Cent	Number of Farm Families
21 - 25	1
26 - 30	2
31 - 35	3
36 - 40	5
41 - 45	18
46 - 50	12
51 - 55	24
56 - 60	19
61 - 65	18
66 - 70	5
Total	106
Mean	51 per cent
Median	52 per cent

438
511 On the other hand, there are scores of items that have to be bought for daily consumption. These are:
[262] (a) Food -- fish, fish sauce, shrimp paste, meat, coconut,
[263] onions, garlic, dried chili, curry essence, limes, tamarind,
[273] palm sugar, white sugar, salt, and cookies: (b) Stimulant --
[276] dried areca, betel, lime, tobacco, tobacco binder, and
[372] [515] liquor; (c) Clothing; (d) Medicine; (e) Soap; (f) Fuel --
Kerosine, matches, charcoal, and fire wood. The list includes only standard items appearing on our check list.
Actually, there are more of such items as coffee, tea, lemon-
*[128] ade, coca-cola, and pepsi-cola. Articles that are bought
[272] but do not appear on the check list for ordinary household expenses for certain technical reasons which will be discussed in the section on consumption later in this chapter are building materials, machinery, farm equipment, furniture and household utensils.

000

The Operator's Remuneration and Measures of Success

From almost the beginning of the study of farm management in the United States, much effort has been given to measuring the success of farming businesses, or of farm-family undertakings or enterprises, and then of correlating various factors with these, such as size of business, yields per acre or per animal, or work-efficiency measured perhaps as crop acres per man or per horse or per tractor, with a view to discovering some general farm management principles or rules for a farmer or farm family to follow in becoming more successful. Black, Clawson, Sayre and Wilcox give the

000 following description of measures now generally in use.[3]

1. Gross farm income: This is the cash income received from the sale of farm products, plus or minus changes in inventories. In some cases, the value of farm products used in the home is also included. This figure is often divided by the number of workers employed on the farm to determine the gross farm income per man, which may be computed for individual farms to show the differences in the "volume of business" handled per man.

2. Net cash farm income: This is the difference between the money income and the money outgo of the farm business. It is the amount of cash income left over from the farm business available for family living, investment, or savings.

3. Net farm income: This is net cash income adjusted for inventory increases and decreases and depreciation. It is comparable to the net income figure accountants compute on corporate income statements. It is the net gain to the farm and farmer and his family from the farm business. It therefore includes the return on the investment. It indicates how much further ahead or behind the farm as a business is at the end of the year than at the beginning. It is the difference between the beginning Net Worth and ending Net Worth as these are reckoned in ordinary bookkeeping.

4. Labor income: This is more precisely called the labor and management income of the farm operator.

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[3] John D. Black, Marion Clawson, Charles R.Sayre and Walter W. Wilcox, Farm Management (New York: The Macmillan Company, 1951), pp. 489-93.

000 It is like net farm income except for two deductions. The first is an estimated charge for the use of the capital invested in the farm business. This was intended by T. F. Hunt, who first used this measure, to introduce a correction for differences in the size of farms, in order to put them all on equal terms so far as size is concerned. The second deduction is an imputed value for the labor of members of the family (not including the proprietor). This was introduced to put all the farms on an equal footing so far as amount of unpaid labor is concerned. What is left is therefore the return to the farm operator for his labor plus his management. In this measure also, the value of home-consumed farm products is not ordinarily included in the receipts, for apparently about the same reasons as given above. When labor income is carefully computed, the value of the dwelling is subtracted from the value o[illegible]e farm in calculating the interest on the investment in the farm business, and the cash costs of boarding the hired help are also added to the wages paid hired labor.

Hunt devised labor income as a means of comparing the efficiency of management of individual farms in the same area, practicing about the same kind of farming, and with the same general level of land values and cash rentals. It has served this purpose reasonably well. Unfortunately, it is sometimes used for comparisons among regions, and at different levels of agricultural prosperity. Its most serious misuse is as a measure of farm incomes for comparison with

000 urban and other incomes.

5. Rate of return on the investment: This is Net Farm Income less an allowance for unpaid family labor and the operator's labor, divided by the total value of the farm investment. The rule followed for imputing value to operator and family labor is what the same labor would have cost if hired. The earnings figure thus includes the contribution of the farm capital plus that of the management. This measure is the same as that used in urban business except that in trade and industry the compensation for hired management is often deducted before computing the rate of return. This measure is put to the fore in the farm accounting done by the University of Illinois and a large number of collaborating farmers. It looks upon a farming enterprise as an employment of the farmer's capital rather than as an employment of the farmer's labor. It measures the rate of return on the capital with the management thrown in and the operator's labor allowed a hired man's wage, rather than the return to labor with the management thrown in and the capital allowed a usual 5 per cent as a rental. Since it varies widely with the amount and quality of the management furnished with the capital, it may well be, therefore, in effect much more of a measure of differences in management than differences in capital. It would be more accurately described as earnings of management and capital per dollar of capital investment. This way of looking at a farm business can be realistic, however, in a region like the Corn

000 Belt where many landlords and others look upon farms as investments. The Illinois accounts always figure labor income too so that the farmer or investor may use either measure.

6. Operator's labor earnings: This is labor income plus the value of family-consumed farm produce and use of the farm dwelling. Professor S. W. Warren says of this measure: "Labor earnings is a better measure of profits than labor income. It is not used as much, because of the difficulty of obtaining accurate information on the amount and value of farm products used in the household."[4] It really includes earnings of management as well as labor.

7. Farm family income: If the success of the farming venture is to be measured by what the farm family gets out of the joint farm-family undertaking, three additions are needed to net farm income, namely, the value of the farm products used by the household, the value of the use of farm dwelling, and any nonfarm earnings of the farm working force. It is possible to organize a farm-family undertaking in such a way as to increase this aggregate without increasing the net business gain of the farming part of it.

8. Income for the family living: The same as (7), less payments on the interest and principal of debt on real estate and chattel. These two items should not be included as cash expenses. They are distributions of income, not expenses.

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[4] S. W. Warren, How to Study a Farm Business.

000 It is seen that some of these measure farm business success more nearly, and some of them the success of the farm-family enterprise.

434 *128 To measure Bangchan operators' remuneration, the author thinks that operator's labor earnings is most suitable.and the next best measure is perhaps the labor income. It was mentioned that Professor Hunt devised labor income as a means of comparing the efficiency of management of individual farms in the same area, practicing about the same kind of farming, and with the same general level of land values and cash rentals. Bangchan conditions, as earlier described, seem to approximate circumstances which Professor Hunt had in mind when he devised this measure.

*243 434 *[128] Table 47 shows frequency distribution of labor income of the 104 sample-farms for the 1948-49 crop year. It is seen that only 57 of these 104 farms produced a positive labor income. Thus, even in the year which many Bangchan farmers considered to be the best rice year in their lives, more than four out of every ten farmers in the sample did not have anything left from the sale of their crop after deducting all farm business expenses and interest on the capital invested. [427] It should be noted, however, that the family still has other incomes accruing to family labor (value of family labor), the use of family owned land (imputed rent), and the use of family owned equipment (interest), as well as the imputed returns to family labor deducted in the calculation of labor income. The family also has the subsistence production which it draws from the farm.

TABLE 47

FREQUENCY DISTRIBUTION OF LABOR INCOME OF 104 SAMPLE-FARMS
Bangchan, Thailand, 1948

*243
434

Class Intervals	Number of Farms
baht	
9,000 - 9,999	1
8,000 - 8,999	0
7,000 - 7,999	0
6,000 - 6,999	1
5,000 - 5,999	2
4,000 - 4,999	2
3,000 - 3,999	7
2,000 - 2,999	6
1,000 - 1,999	12
0 - 999	26
-1,000 to -1	25
-2,000 to -1,001	12
-3,000 to -2,001	3
-4,000 to -3,001	4
-5,000 to -4,001	2
-6,000 to -5,001	00
-7,000 to -6,001	0
-8,000 to -7,001	0
-9,000 to -8,001	1
Total	104
Mean	356 baht
Median	212 baht

*243 434 [435] Of 47 farms which had negative labor incomes, 37 were in the class interval of from -1 to -2,000 baht, 9 from -2,001 to -4,000 baht, and one -- the least efficient as far as this measurement is concerned -- produced as low a labor income as -8,006 baht. This last farm had to support a large family of eleven members. With an acreage of 40 rai, which was rather small relative to the size of the family (another family of ten was operating a 110-rai farm in that same year), it was natural that this farm did not have much rice to sell.

*243 434 342 [427] [435] In figuring farm expenses, we intentionally left out the dwelling and included as farm buildings only the ones that housed the buffaloes, farm equipment and materials. The main reason for this omission was that there was a wide range of dwelling facilities in Bangchan -- from a teak building valued at 30,000 baht to a dirt floor thatched shack valued at no more than a few hundred baht. Besides, rental for a dwelling in rural areas of the country is practically unknown. Since a family living in the village must have their own dwelling regardless of their occupation, it was considered in this study that dwellings should be separated from farm investment. This consideration was further substantiated by the fact that when a family gives up farming they continue to live in the dwelling while all the farm equipment may be sold.

*243 434 433 When the charge for dwelling is dispensed with for the reasons given above, the only difference between labor

243 income and operator's labor earnings lies in the value of
434 farm produce consumed by the family. Earlier, five kinds
433 of produce were listed -- rice, fish, eggs, fruit and vege-
[235] tables. For technical reasons, we consider only rice and
eggs as products of the farm, rice being the primary crop
[226] and eggs the secondary crop. Fish is not considered a farm
product because Bangchan villagers fish for consumption,
not for sale. Besides, fishing is done by every resident
of the village, farmers and non-farmers alike. It is thus
[244] more of a way of life than an economic enterprise. The same
[245] is true for fruit and vegetable growing which is done in a
very small scale.

If we agree on considering only rice and eggs as the products of the farm, it is not difficult to estimate the amount and value of farm produce consumed by the family for Bangchan operators can readily give a rather accurate information on their rates of consumption of these two products. Thus, under Bangchan condition the figure for operator's earnings is not as difficult to obtain as it appears to be the case among most American farms. The frequency distribution of operator's labor earnings of our 104 sample-farms is given in Table 48. It is seen that only 17 farms produced negative remuneration for the operator computed by this method as against 47 farms by the labor income method. As Professor Warren has said, of these two, labor earnings is a better
[171] measure of profits. It is especially so in Bangchan and
perhaps in other agricultural regions in Southeast Asia

[TEXT CONTINUED ON PAGE 306]

TABLE 48

FREQUENCY DISTRIBUTION OF LABOR EARNINGS OF 104 SAMPLE-FARMS
Bangchan, Thailand, 1948

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434

Class Intervals	Number of Farms
baht	
11,000 - 11,999	1
10,000 - 10,999	0
9,000 - 9,999	0
8,000 - 8,999	0
7,000 - 7,999	2
6,000 - 6,999	4
5,000 - 5,999	4
4,000 - 4,999	7
3,000 - 3,999	7
2,000 - 2,999	18
1,000 - 1,999	27
0 - 999	17
-1,000 to -1	12
-2,000 to -1,001	3
-3,000 to -2,001	1
-4,000 to -3,001	0
-5,000 to -4,001	0
-6,000 to -5,001	1
Total	104
Mean	1,980 baht
Median	1,685 baht

*243 434 433 [171] where farm families are relatively large and agricultural workers are usually under-employed.

Since farming in Bangchan is basically a single-crop enterprise, the major crop (rice) heavily outweighing the secondary crop (poultry), we are in a position also in this study to use another measure of success -- returns from rice over the cost of producing it -- without entailing the difficulty of cost allocation. We simply charge all items of expenses including the values of family labor and the operator's labor to the rice enterprise, the only exception being the value of paddy consumed by chickens and/or ducks. By returns from rice is meant the market value of the total harvest of paddy. This measure is similar to the net farm income when the farm products used by the family are included in the receipts (in some states of the United States this is done, but ordinarily not, the main reason for leaving these out being the difficulty of imputing accurate money values to them).

*243 *128 434 433 Tables 49 and 50 shows respectively the frequency distribution of the cost of producing paddy per tang and per rai for the 104 sample-farms. It is seen that the coefficient of variability of the cost per rai is lower than that of the cost per tang, the former being 19 per cent and the latter 27 per cent. This is to be expected, for on the basis of such a unit area as rai there are several items of cost that are somewhat fixed -- seeds, rent, human and buffalo labor in all steps of field preparation, planting, and

[TEXT CONTINUED ON PAGE 309]

TABLE 49

FREQUENCY DISTRIBUTION OF COST OF PRODUCING
ONE TANG OF PADDY OF 104 SAMPLE-FARMS
Bangchan, Thailand, 1948

*243
434
433

Class [illegible]ervals	Number of Farms
baht	
4.00 - 4.99	14
5.00 - 5.99	21
6.00 - 6.99	19
7.00 - 7.99	25
8.00 - 8.99	13
9.00 - 9.99	6
10.00 - 10.99	2
11.00 - 11.99	2
12.00 - 12.99	1
13.00 - 13.99	0
14.00 - 14.99	1
Total	104
Mean	6.76 baht
Median	6.92 baht
S.D.	1.87 baht
Coef. variability 27 per cent	

TABLE 50

FREQUENCY DISTRIBUTION OF COST OF PRODUCING ONE RAI OF PADDY OF 104 SAMPLE-FARMS

Bangchan, Thailand, 1948

*243
434
433

Class Intervals	Number of Farms
baht	
120 - 139	2
140 - 159	8
160 - 179	7
180 - 199	19
200 - 219	22
220 - 239	23
240 - 259	11
260 - 279	5
280 - 299	4
300 - 319	0
320 - 339	2
340 - 359	1
Total	104

Mean . . . . 215 baht

Median . . . . 215 baht

S.D. . . . . 41 baht

Coef. variability . . . . . . 19 per cent

*243 *128 433 434 harvesting. The only cost item that appears to vary with the size of the crop is the cost of threshing and winnowing which does not figure prominently in the cost of producing rice.

Table 51 shows the frequency distribution of returns over cost of producing rice of our 104 sample-farms.[5] It is seen that there were 79 farms which, according to this measure, produced some profit ranging from 0 to some 10,500 baht, while there were at the same time 25 farms which produced a loss ranging from -1 to some -6,500 baht.

*243 *128 434

Factors Affecting Farm Profit

Farm profit depends on a number of factors. Among these are listed below by Hart and Warren as "what makes a farm pay."[6]

1. Prices
2. Quality of land
3. Size of business
4. Rates of production of crops and animals
5. Selection and combination of enterprises
6. Labor efficiency
7. Farm layout, farmstead and building arrangement

[TEXT CONTINUED ON PAGE 311]

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*[128] [5] Returns over cost was calculated by multiplying the rice crop by farm price and deducting the total cost from this total. Method of computing cost was described on page 143.

[6] V. B. Hart and S. W. Warren, Farm Management Manual.

TABLE 51

FREQUENCY DISTRIBUTION OF RETURNS OVER COST OF PRODUCING PADDY OF 104 SAMPLE-FARMS
Bangchan, Thailand, 1948

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Class Intervals	Number of Farms
baht	
10,000 - 10,999	1
9,000 - 9,999	0
8,000 - 8,999	0
7,000 - 7,999	1
6,000 - 6,999	1
5,000 - 5,999	4
4,000 - 4,999	4
3,000 - 3,999	6
2,000 - 2,999	11
1,000 - 1,999	20
0 - 999	31
-1,000 to - 1	12
-2,000 to -1,001	88
-3,000 to -2,001	3
-4,000 to -3,001	0
-5,000 to -4,001	1
-6,000 to -5,001	0
-7,000 to -6,001	1
Total	104
Mean	1,190 baht
Median	887 baht

*243

434 8. Efficiency in the use of farm equipment

*128 9. Markets and marketing

While these nine points may appropriately be considered as standard factors affecting farm profit, it is obvious that the extent of their respective effect varies with location, type of farming, and the stage of technological development of the area in question. In Bangchan, we may immediately rule out as an important variable the selection and combination of enterprises because there is only one enterprise -- rice. Farm layout, farmstead and building arrangement is also a rather insignificant factor as a variable affecting the profit of rice farms, although we have earlier noted that parcelization may have increased the cost of labor and irrigation. Efficiency in the use of farm equipment may also be considered as an insignificant variable factor in Bangchan; for the equipment units are usually small although numerous, hence farm equipment tend to be fully utilized.

*243 Labor efficiency needs more explanation than mere
434 passing comment. Table 52 shows that labor constitutes
461 51 per cent of the total cost of producing rice. It should be noted, however, that of 3,743 baht that goes to labor for each farm only 485 baht is actually spent, the balance of 3,258 baht being imputed values of family's labor and the operator's labor. It is seen, then, that a reduction in labor cost would involve largely only imputed values. It certainly will correspondingly reduce the total cost

[TEXT CONTINUED ON PAGE 313]

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TABLE 52

BREAKDOWNS OF COST OF PRODUCING RICE ON 104 SAMPLE-FARMS

Bangchan, Thailand, 1948
(Total area -- 3,528 rai; total crop -- 112,415 tang)

Items	Total	Average			Per Cent
		Per Farm	Per Rai	Per Tang	
	baht	baht	baht	baht	
Rent					
Actual	99,500	957	28	0.88	13
Imputed	70,600	679	20	0.63	9
Total	170,100	1,636	48	1.51	22
Labor					
Actual					
Pieceworkers	25,700	247	7	0.23	3
Hired laborers	24,800	238	7	0.22	3
Sub-total	50,500	485	14	0.45	6
Imputed					
Family workers	237,800	2,287	67	2.11	31
Operator	101,000	971	29	0.90	13
Sub-total	338,800	3,258	96	3.01	44
Total	389,300	3,743	110	3.46	51
Seeds, materials	42,600	409	12	0.38	6
Depreciations	73,200	704	21	0.65	10
Interest on investments	84,600	813	24	0.75	11
Grand Total	759,800	7,305	215	6.76	100

*243 434 461 and enhance income from the farm, but it would not significantly affect the farm family income or income for the family living (see definitions under Headings 7 and 8 of the section on the operator's remuneration and measures of success) unless more land is added.

*243 433 434 In rice farming, rates of production of crops and animals is reduced to rice yield per rai. At the present stage of technological development in Bangchan, this is not as much a result of management as of nature -- the water condition and the quality of land (in both senses of soil fertility and levels of the fields). Since we already have quality of land as a factor, rates of production may thus be eliminated.

After eliminating factors that are either insignificant or duplicates of other factors under Bangchan conditions, the standard factors affecting farm profit are thus reduced to prices, quality of land, size of business, and markets and marketing. These influences are familiar to students in agricultural economics, and therefore do not need further elaboration here.

[171] In addition to these standard factors, there are certain special factors affecting farm profit which the author suspects to be appropriate not only to Bangchan but also to all other rice producing areas of Southeast Asia. These are the differentials in paddy prices, in rates of interest, rentals, and wage.

*243 Differentiation in paddy prices is limited to cases
426 where farmers have received in advance the payment for paddy
432 to be delivered at harvesting time. This is a common practice which is called in Thai "tog khao" (lit., fall rice). Usually, the advance price received by the farmer is about half or not more than three-fifths of what he would normally receive. Considering that cash is usually received about a month or two before the delivery of the paddy, it would seem that tog khao is a kind of loan with as high a rate of interest as from 25 to 50 per cent per month.

*243 A similar practice is adopted with respect to advanced
426 payment for piecework, where pieceworkers are committed to
465 uproot, transplant, or harvest at about half of the prevailing rates. This is called tog raeng (lit., fall labor).

*243 Tables 24 and 25, in the section on land tenure of
128 Chapter III, show a wide range of rental rates of rice lands
427 which have not demonstrated any marked difference in crop producing ability.

Rates of interest in Bangchan vary greatly from 0 to 10 per cent per month. This topic will be discussed more fully in later sections of this chapter.

*243 The important point that should be observed in con-
434 nection with these differentials in paddy prices, rates of
556 interest, rentals, and wage is that it is the less affluent farmers who usually bear the burden of higher costs due to these practices. Thus, these differentiations serve only to widen the gap between poor and well-to-do farmers.

Ordinary Household Expenses

*243 511 *128 During the inundation period of 1952 (October 1 to December 3)when farmers were not occupied with field work, a study of household expenses was made covering 96 continuing farm operating families and the ten new farm operating families which have branched off from our original sample-families. In this special study, only ordinary household expenses were covered including food, stimulants, clothing, medicine, toilet articles, fuel, cash contributions, and personal expenses.

The method of study has already been described in the chapter on methodology. Annual ordinary expenses of an average farm operating family are shown in Table 53, which is intended to give the kind and quantity and value of each item of expenses consumed by an average family. The frequency distribution of total annual expenses is shown in Table 54.

*243 511 It is seen that total annual expenses average 6,056 baht per family annually. Of this, about half, or to be exact 2,962 baht, is actually purchased, the rest being produced by the family. Major items, in terms of money value, among cash expenses are found to be coconut, palm sugar, cookies, tobacco, clothing, kerosine, contributions to neighbors, and personal expenses, each exceeding 100 baht annually.

The reason for large expenses on coconut and palm sugar is that these two foods have relatively high prices

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TABLE 53

AVERAGE ANNUAL ORDINARY EXPENSES OF 106 SAMPLE-FAMILIES

Bangchan, Thailand, 1953
(Average family size, 5.7; avemage consuming unit, 4.7)

Items	Quantity		Value in Baht	
Home-produced				
Food				
White rice	1,623	kg	1,623	
Raw fish	151.2	kg	756	
Fermented fish	137.7	lit	413	
Shrimp paste	16.7	kg	75	
Eggs	108	eggs	54	
Vegetables	174	kg	174	
				3,094
Purchased				
Food				
Raw fish	16.6	kg	83	
Fish sauce	36	bottles	54	
Shrimp paste	6	kg	27	
Pork and beef	8.4	kg	84	
Vegetables	1	kg	1	
Coconut	196	fruit	292	
Onion	11.3	kg	34	
Garlic	11.3	kg	34	
Dried chili	7.6	kg	53	
Curry essence			10	
Limes	80	fruit	16	
Tamarind	6.3	kg	19	
Palm sugar	71.4	kg	152	
White sugar	4	kg	16	
Salt	64	lit	8	
Cookies			192	
				1,075
Stimulants				
Dried areca	8	kg	48	
Betel			68	
Lime	3.8	kg	3	
Tobacco	4.4	bundles	120	
Tobacco binder	7	bundles	14	
				253
Clothing				556
Medicine				92
Toilet (soaps)				44
Fuel				
Kerosine	77.7	lit	101	
Matches	104	boxes	26	
				127
Cash contributions				
To temple			82	
To neighbors			261	
				343
Personal				472
Total				6,056

TABLE 54

FREQUENCY DISTRIBUTION OF ANNUAL ORDINARY EXPENSES OF 106 SAMPLE-FAMILIES
Bangchan, Thailand, 1952

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Class Intervals	Number of Farms
baht	
3,000 and under	6
3,001 - 4,000	12
4,001 - 5,000	15
5,001 - 6,000	21
6,001 - 7,000	13
7,001 - 8,000	9
8,001 - 9,000	5
9,001 - 10,000	5
10,001 - 11,000	4
11,001 - 12,000	0
12,001 - 13,000	2
13,001 - 14,000	1
14,001 - 15,000	2
15,001 and over	1
Total	106
Mean	6,056 baht
Median	5,936 baht

*243 511 and that they are consumed daily. Expense on cookies is high because of school children's daily allowances which *243 857 511 were assumed to be spent entirely on this item. Even though cash is extremely scarce in the village, especially during the period from July until just before harvesting time in January when roughly seven out of ten farm operating families do not have any cash at all, the children still have the privilege of receiving daily cash allowance. This is possible because of the chicken enterprise. The children simply take eggs along and convert them into cash at cooky stalls in the school yard. In this manner, it is seen that the school children have an important part in the daily flow of Bangchan eggs into Bangkok markets.

*243 276 511 The kind of tobacco commonly used in Bangchan is the relatively inexpensive native tobacco which smokers make into cigarettes themselves with the use of a special kind of thatchleaf binder. Bangchan women do not smoke, but they use tobacco heavily while they chew betel. Most men, young and old, are in the habit of smoking, while chewing betel is now limited to elderly people of both sexes. Tobacco is thus rated among major items of expenses because it is used in smoking as well as betel chewing.

*243 291 511 Obviously, clothing is one of the major items of expenses. In fact, it is the highest item after food, averaging 556 baht per family annually. Since rice farmers work partially under water most of the time, the rate of wear and tear of clothing is rather high. Each family worker

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291 needs at least two work suits in each rice season, one
511 during the field preparation and another during the harvesting
season.

372 Kerosine is used every day for lighting purposes.
226 We do not include in this category kerosine which is used
511 in the farm work; but that used with the pressure lamp in
fishing by spearing during the night is included in the
ordinary household expenses, for we do not consider fishing
as a farm enterprise but as a routine activity participated
in by all Bangchan residents, farmers and non-farmers alike.

431 Contributions to neighbors is a necessary item of
476 expense in the village. These are cash gifts made by invited
796 guests to the sponsor of such rituals as ordination,
511 cremation, marriage, topnotch-cutting, and teacher worship.
[792] These rituals usually take place during the dry season following
[764] harvesting when cash is abundant in the village and
[585] are always followed by feasts, not uncommonly in a series
of two or three days. Since all these rituals necessitate
the participation of the priests, they have to be arranged
in consultation with the temple to avoid conflicting
schedules. Although few rituals have been noted to be in
conflict with one another, usually they are spread throughout
the dry season and most people are able to attend
rituals to which they are invited. In cases where they
cannot attend in person, they are obliged by conventional
requirement to send in their cash contributions. The
standard cash contribution is 5 - 10 baht. Usually, a

431 476 796 511 guest contributes exactly the same amount that was given him by the man when he last attended his party. Written account is always kept by the host specifying contributors and respective amounts given. When invited to a ritual, the guest consults his book and takes along an appropriate amount of cash. It is on this basis of reciprocal help that a prospective sponsor of a ritual has been able to determine the size of cash contribution he would receive from neighbors. Since a guest normally contributes no more than ten baht and no less than five baht, his annual expense on this item depends largely on the number of parties he attends each year. Our records for 1952 show that this ranges from 30 to 1,000 baht, averaging 343 baht.

27 511 We include in the personal item of expenses the amounts spent on traveling, entertainment, coffee, liquor, etc. To be sure, some of these should be grouped under the stimulant item. We, however, intentionally put coffee and liquor here because the sequence seems to better fit the requirements of the persons responding to questions so that better answers might be obtained. Tobacco, betel, and areca, for example, appear to have somewhat constant rates of consumption. They are usually bought in large quantities which will last for a considerable length of time. As a result, informants are in a position to give more accurate rates of consumption of these items than those of liquor and coffee of which consumption is somewhat irregular and is difficult to estimate.

514 Generally speaking, a remarkable degree of homogeneity in the pattern of ordinary expenses has been observed among Bangchan farm families. During the course of the enumerating work of this consumption study, however, it became progressively apparent that each item of ordinary expenses varied differently in its respective rate of consumption by sample families. The quantities of rice and fish consumed each year, for example, could be estimated within a small margin of error when the family composition was known; the amount of money spent on medicine, on the other hand, was unpredictable.

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511 In order to determine the degree of variability in the rate of consumption of each item, the figures of consumption must first be reduced to comparable terms. We have already known from Table 32, that the family size of our 106 sample-families range from one to thirteen, averaging 5.7 persons per family. But size in terms of number of persons may mislead, because a child certainly consumes less than an adult. To reduce variation due to age differences, in this consumption study family size is expressed in terms of consuming units. On the basis of information generally given by Bangchan residents that a child consumed about half the amount of rice normally consumed by an adult, we arbitrarily designate one-half a consuming unit to represent each child age 14 or under and one consuming unit represent each adult age 15 or over. Table 55 shows the frequency distribution of the size of family in terms of consuming units of our 106 sample-families. It is seen

[TEXT CONTINUED ON PAGE 323]

TABLE 55

DISTRIBUTION OF FAMILY BY CONSUMING-UNITS
106 FARM OPERATING FAMILIES
Bangchan, Thailand, 1952

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Consuming Units	Number of Families
1.0	2
1.5	0
2.0	4
2.5	7
3.0	14
3.5	10
4.0	15
4.5	5
5.0	9
5.5	8
6.0	9
6.5	5
7.0	9
7.5	4
8.0	3
8.5	0
9.0	1
9.5	0
10.0	1
Total	106

Mean 4.7
Median 4.5
Mode 4.0

*128 that the size ranges from 1.0 to 10.0 consuming units,
511 the mean being 4.7, median 4.5, and mode 4.0 units.

In order to determine the degree of variability of the rate of consumption of each of the 32 items of expenses, a sub-sample was chosen from all the 15 modal-size families of 4.0 consuming units. Since these fifteen families were already of comparable size as far as consumption was concerned, expenses on each of the 32 items could be directly compared to one another. The coefficient of variability of each of these 32 items of ordinary expenses is shown in Table 56.[7] It is seen that the variability coefficient varies from 30 per cent for rice to 199 per cent for medicine. As expected, rates of consumption of the basic items were found to vary least among rice, fish, clothing, tobacco, and garlic, and vary most among curry essence, eggs, and medicine.

511 Several factors have been noted to affect the variability of the rate of consumption of these various items of both home-produced and purchased goods. Since food constitutes more than two-thirds of the ordinary household

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[7] The standard deviation of each item was first calculated by the formula $S.D.^2 = \frac{\Sigma X^2 - \frac{(\Sigma X)^2}{N}}{N-1}$, where S.D. is standard deviation, X individual items of expenses, and N the number of items; and then converted into coefficient of variability by the formula Coef. var. $= \frac{S.D.}{\bar{X}} \times 100$, where $\bar{X}$ is mean expense.

TABLE 56

VARIABILITY OF VARIOUS ITEMS OF EXPENSES OF 15 SAMPLE-FAMILIES
Bangchan, Thailand, 1952

	Coefficient of Variability
	per cent
A. Low variability	
1. Rice	30
2. Fish	31
3. Clothing	39
4. Tobacco	40
5. Garlic	42
B. Moderate variability	
6. Onion	53
7. Soap	57
7. Coconut	57
9. Fish sauce	60
9. Salt	60
11. Palm sugar	62
12. Contribution to wat	63
13. Betel	64
14. Tamarind	67
15. Dried chili	69
15. Fermented fish	69
17. Kerosine	70
18. Shrimp paste	73
19. Areca	76
20. Vegetables	77
21. Limes	78
22. Contribution to neighbors	83
23. Matches	84
24. Lime	87
C. High variability	
25. Personal	100
26. Children's pocket money(coddies	103
27. White sugar	112
28. Pork and beef	123
29. Tobacco binder	125
30.Curry essence	126
31. Eggs	152
32. Medicine	199

511 expenses (Table 53) and the Thai concept of food taking is somewhat different from the Western concept, an explanation of the food habit of Bangchan residents, which in no way differs from that of Thai farmers elsewhere in the country, is perhaps necessary at this juncture.

262
264 By far the most important single dietary item of the Thai is khao or rice, which is the basis for every meal. The general term for "eat" is kin khao which has the literal meaning "to eat rice". Other dietary items are considered as embellishments and are thus called kab-khao (lit., with-rice). Typically, the "with-rice" items contain high seasoning in the form of chili and various hot curries. It is inconceivable for a Thai to eat "with-rice" alone without any rice, for not only the "real food" would then be missing but also there would be nothing to neutralize the highly flavored taste of the "with-rice". Actually, "with-rice" and rice are fed to the mouth in one lump with spoon or hand as the case may be. Eating "with-rice" alone would be just like eating butter without any bread. Moreover, "with-rice" are relatively more expensive than rice. Since the general idea is that they serve only to induce the in-take of rice, for sheer economic reason they should be consumed as little as possible so long as the required amount of rice in-take can be maintained. Accordingly, proper proportion of "with-rice" to rice in each helping has become one of the strictly observed table manners. This is easily noticeable, for only rice is served individually when the

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264 family sit at the table while "with-rice" are placed at the center and each person must partake of a small bit of these, just enough to properly go with a spoonful of rice taken each time. This table etiquette is generally observed throughout the country by all classes of people. A story had it that a Thai student of an aristocrat family wrote home objecting to the proposed marriage between his sister and one of his Thai friends in America. One count against the man was that he had been observed to have taken too much "with-rice" while dining out at a Chinese restaurant in New York!

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182 Among the factors affecting variability of the rate of consumption of various items of goods, the following may be mentioned:

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182 a. Relative price of the food in relation to its ability to mollify hunger when taken with rice. When Bangchan farmers were questioned why they did not consume eggs produced at home but instead sold them and bought the inferior platoo fish (Rastrelliger chrysozonus), the answer was that an egg barely induced them to take a plate of rice whereas one platoo fish bought with half the money obtained from the sale of an egg could induce them to take three or four plates of rice and thus satisfying a hearty meal.

511
182 b. Homogeneity of quantitative need for certain products like rice, fish, clothing, tobacco, and garlic. Consumption per consuming unit of these goods has been observed to be more or less constant regardless of the prices and the family's purchasing power.

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184 c. The family's purchasing power. Certain goods
511 considered as luxuries -- medicine, eggs, pork and beef,
and white sugar -- were not consumed by poor families.

d. Individual taste and preference. The Moslems
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276 would not consume any pork although they had enough money
261 to buy it. Some poor farmers spent more money on curry
182 essence than their more affluent neighbors because they
511 preferred highly flavored dishes, and some tobacco smokers
did not spend a cent on tobacco binder because they preferred the home-grown banana leaf binder to the thatch leaf binder which had to be purchased.

182 e. Producing ability of the family. It was observed
511
[184] that those who caught more fish tended to consume more fish
regardless of their financial conditions.

f. Health affected the consumption of medicine.

[431] g. Prestige affected the amount of cash contributions
[476]
[554] to neighbors.

h. Personal habits -- thrift, fun loving, indulgence, like or dislike of liquor -- affected the amount of personal expense.

i. Presence or absence of children of school age in the family affected the consumption of cookies.

Special Expenses

511 By special expenses we mean major items of expenses
which do not occur regularly but which may arise in one time or another. Examples: purchases of land, gold and

511 jewelries, and major farm and household equipment; expenses on major repairs, sponsoring rituals, major medical cares, and gifts to offspring when they start an independent family; and odd expenses like a trip to Mecca and legal prosecution.

*128
511 Fortunately, the somewhat spectacular nature of this type of expenses has caused each item to be remembered well by the farmer even for a period of four or five years. Another factor contributing to good memory on this subject on the part of farm operators is the limited number of incidents which were found to average three per family and range from zero to six during the period from the dry season of 1948 to the end of the crop year of 1952-53.

Records of special expenses were taken very informally when the author revisited the 96 continuing farm operating families (of the original 104 sample-families) in 1952 after an absence from the village of three years. The visit was in part a courtesy call during which time each farm operator was asked how he had been getting along during the three lapsing years. Every person approached was apparently pleased and gave full cooperation when asked to list the kind and amount of his major items of expenses during the period from the dry season of 1948 to the time the interview was made. These were recorded and kept in separate file for each farm operator. To avoid errors of omission these operators were visited several times and the same topic was brought up. The informations on these special expenses were constantly kept up to date until the end of the 1952-53

*128 511 crop year. Except for a few exceptional cases, no new item appeared during the few months that lapsed because rice farmers customarily make their major purchases during the dry season following harvesting time. Special expenses of the 96 continuing families during the period from March, 1948 to February, 1953 were shown in Table 57.

511 Some explanations are necessary for Table 57. In the first place, whereas ordinary household expenses are estimates based on experience of farm operators, these special expenses are actual amounts spent during the specified period of five years. [432] Most of the expenses on land purchases were down payments and subsequent partial payments. Of the four families reporting purchases of household equipment, three bought guns and one bought a sewing machine. [757] All major repairs were for dwellings. [755] The major medical expenses did not include small amounts of money regularly spent on drugs for headache and stomachache or even on delivery of babies which was done by traditional midwives whose fees were nominal. In fact, there were only three cases of major medical expenses. The largest one included [525] Bangkok hospital bills amounting to 14,000 baht. The 36,190 [484] baht of odd expenses included 3,000 baht on gambling(only [691] two operators reported expenses on this item, others admitted win and losses but did not give the amounts), 2,000 baht on purchases of government lotteries which are issued once a week and also on several other occasions, 500 baht on legal prosecution, 300 baht on reward for the

[TEXT CONTINUED ON PAGE 331.]

TABLE 57

SPECIAL EXPENSES OF 96 SAMPLE-FAMILIES
DURING MARCH, 1948 -- FEBRUARY, 1953
Bangchan, Thailand

Items	Amount	Number of Families Reporting	Average for Fam. Reporting	Ranges
	baht		baht	baht
Purchase of land	43,235	9	4,804	1,100 - 9,000
Purchase of gold	64,357	48	1,341	240 - 5,000
Purchase of f. equip.	136,074	56	2,430	150 - 8,050
Purchase of household equipment	8,200	4	2,050	1,550 - 2,800
Major repairs	78,870	34	2,323	350 - 7,000
Loan settlements	101,530	20	5,076	1,100 - 21,000
Loans extended	51,630	14	3,688	300 - 16,000
Net expenses in sponsoring rituals*	156,996	36	4,361	-10 - 15,000
Major medical expenses	19,400	3	6,467	400 - 14,000
Odd expenses	36,190	7	5,170	300 - 30,000
Gifts to offspring	15,600	4	3,900	100 - 10,500
Total	712,182			

* Total expenses minus cash contributions from guests.

511 [525] [691] [484] [431] [593] recovery of a boat stolen, 390 baht on "laxity", and 30,000 baht on a trip to Mecca. The gifts to offspring included only gifts presented when offspring left the family to start an independent family of their own.

Special Receipts

*128 434 By special receipts we mean major items of receipts in addition to those regularly obtained from crops, labor, rent, and interest on loans extended. These are counterparts of special expenses, and informations about them were obtained from the 96 sample-families in the same manner and almost concurrently. Examples of these special receipts are: sales of land, gold, and major farm equipment; loans obtained,full or partial settlement of loans extended; gifts and remittances; and odd receipts like those from government lottery prizes, running a gambling house, and laxity practices. Special receipts of the 96 sample-families during the period from March, 1948 to February, 1953 were shown in Table 58.

Some of these items of special receipts need explanation. Land sold by two farm operators were sold for cash needed for loan repayment. It is perhaps worth noting that one of these two operators was in the habit of heavy drinking and had been in recent years spending about two thousand baht annually on liquor alone, while the other was in the habit of gambling. All five operators reporting sales of gold gave the reason for the sale that cash was needed to either buy farm equipment (buffaloes) or to repay

[TEXT CONTINUED ON PAGE 333]

TABLE 58

SPECIAL RECEIPTS OF 96 SAMPLE-FAMILIES DURING MARCH, 1948 -- FEBRUARY, 1953
Bangchan, Thailand

Items	Amount	Number of Families Reporting	Average for Family Reporting	Ranges
	baht		baht	baht
Sale of land	18,700	2	9,350	7,700 - 11,000
Sale of gold	12,150	4	3,038	250 - 6,000
Sale of farm equip.	6,500	5	1,300	500 - 3,000
Loan settlements	1,700	2	850	200 - 1,500
Loans obtained	141,100	29	4,866	400 - 30,000
Remittances	6,200	2	3,100	200 - 5,000
Odd receipts	6,500	3	2,167	1,500 - 3,000
Total	192,850			

*128
434 the loans previously extended to them. Among the five operators reporting sales of farm equipment, one sold his part of the joint ownership of an engine in order to buy a new one for his own, three sold their old buffaloes and bought younger ones, and one -- the inventor of the propeller windmill mentioned earlier in this dissertation -- sold windmills and other farm implements he made for sale.

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511 The average amount of money received from loan settlement during the past five years of 1,700 baht appeared to be too small considering that the amount of loans extended by the sample-families during the period was as high as 51,630 baht and that the ability of these sample-families to settle loans extended to them was 101,530 baht out of a total of 141,100 baht. An explanation for this lies in switching of debt responsibility. At least one case was known where an operator, who was in debt to a fellow farm operator, sold a parcel of land to a third party at 11,000 baht. This buyer, apparently not having enough cash, arranged that he would assume responsibility for the amount of 8,000 baht which the seller of the parcel owed the other farm operator and would pay only the balance of 3,000 baht to the seller in cash. Strictly speaking, the creditor should report that he received a certain amount as loan repayment (actually, 4,000 baht for the principal and 4,000 baht for interest of 25 per cent for four years) and spent this same amount on loan extension. Actually, however, only the seller of the parcel reported that he had sold a

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426 parcel of land and had cleared off his debt. The creditor
432 did not report anything about this deal, for he really did
511 not receive a cent out of the arrangement.

434 Loan obtained is the largest item of special receipts
426 involving 29 farm operators and 141,100 baht. The following
511 were the purposes of the loans sought as given by borrowers: land purchase, 7 cases; buffalo purchase, 3 cases; sponsoring rituals, 3 cases; to partially defray ordinary household expenses which exceeded cash incomes especially in years of poor crop, 16 cases; and to cover major medical expenses, 2 cases (two operators listed two combined purposes of the loan, hence the total becomes 31 instead of 29 if there is only one purpose for each case).

Net Accumulation of Assets

*128
434 Figures of net accumulation of assets within a certain
511 period are valuable to the understanding of the economic conditions of farm operators in that they show the economic achievement, or the internal saving, of these operators. In order to obtain exact figures, however, it is necessary that we have complete inventories of the farm families at the beginning as well as the end of the period. Since our data on inventories of the sample-families for 1948 and 1953 are incomplete, especially we are totally unaware of the quantitative debt situation in 1948, we cannot use the simple method of subtracting the net worth as of February, 1953 from that as of March, 1948 to determine net accumulation

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of assets during this five-year period. At best, we can only attempt at estimates based on certain known figures from records of special receipts and special expenses described in the two preceding sections.

Assets may conveniently be broken down into land, dwellings, household equipment, farm buildings, farm equipment, livestock, supplies, gold, cash, and accounts receivable (payable). We shall see that some of these may be left out of consideration in our method of calculating net accumulation of assets from records of special receipts and special expenses during March, 1948 and February, 1953.

It was observed that all the sample-families used the same dwelling throughout the period. Any cash outlay in repair should not be considered as an increase in inventory at least as average over the whole sample, for it can be reasonably assumed to be an amount necessary to maintain the dwelling at its original value at the beginning of the five-year period.

Assuming no change in technology, as was observed to be the case, farm buildings and farm equipment can also be left out of consideration for the same reason as the case of dwellings. It was observed that farm operators in Bangchan kept no more farm equipment than necessary. New purchases can thus be assumed to be replacement for worn-out equipment, and should not be considered as inventory increase, again when averaging over the whole sample.

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The only livestock kept on rice farms other than buffalo, which were included under consideration of farm equipment, are chickens and ducks, which are raised "naturally." It was earlier mentioned that the size of the flock was more or less constant. Livestock, therefore, did not figure in significant inventory changes, and can also be left out.

*[243]

The only item of supplies on rice farms is paddy stock. This is used up and sold out each year. For more or less the same size of farm, and spreading over a series of five years, a difference in the average amount of paddy stock at about the same time of the year in 1948 and in 1953 would not figure significantly in inventory change.

It was also already mentioned that rice farmers did not want to keep cash at their homes for fear of robbery, and that any person receiving a large amount of cash quickly passed the money on to others. We can therefore assume that the amount of cash on hand at the same time of the year does not vary much. Cash, then, may also be left out of consideration.

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Of the items of assets enumerated above, there are now to be considered only land, household equipment, gold and accounts receivable (payable). In all purchases of land, gold, and household equipment, only the cash paid was recorded and considered as assets accumulated. For example, when an operator purchased a parcel of land at 7,000 baht and paid the down payment of 1,000 baht, only the 1,000 baht

434 was considered as spent in land purchase. If, however,
432 he made another partial payment of 2,000 baht during the
511 period covered by the study, a total of 3,000 baht was considered. Since purchases of gold and household equipment are normally made with cash, a total of cash spent on these three items (land, household equipment and gold) would seem to fairly well indicate the extent of internal saving of
434 each family. The assumption here is that one would not
426 borrow money to buy gold or a gun. With this correction
511 the figure remaining will represent a change in net assets, if we can assume no other changes in the debt situation. For those who bought these assets, it is very unlikely that any increase in outside debt occurred. The reason for this belief lies in interest rate differences: any person with some cash (which may be borrowed at low rate of interest in case he was about to buy land) would rather settle his high interest bearing debts first before buying household equipment or gold or making down payment for land. For those who did not buy these assets, some increase in debt for consumption purposes may have occurred. Both groups may have decreased debts during this period. The most likely assumption is that those buying land experienced a net decrease in debts other than those incurred in buying land, while those not buying such assets experienced a net increase in debts. The balance was probably one of some
[454] increase in debt in the village. Therefore, although these figures for net accumulation of assets provide a fair

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426 representation of internal savings in the community, they
454 probably overstate this increase somewhat.
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When calculated in the manner outlined above, the
511 net accumulation of assets of our 96 sample-families was
434 found to total 84,942 both during the period from March, 1948 to February, 1953, averaging 885 baht per family per year. The frequency distribution of this accumulation of assets is shown in Table 59.

It is seen that of 96 sample-families, 90 had positive accumulation while only 6 had negative accumulation. Fifty-six or more than half of the total number of families studied had an accumulation of assets in the class interval between 0 and 999 baht. The highest amount of accumulation was found to be 9,000 baht, while the lowest was -10,470 baht.

We should examine the figures of Table 59 more closely before drawing a sweeping conclusion from the mere fact that 90 out of 96 sample-families had positive accumulation. In the first place, the raw data show that of the 56 families reporting accumulation in the class interval of 0 - 999 baht, there were 42 families whose accumulation was 0. Thus the number of families with positive accumulation was really not 90, but actually 48 or only half of the total sample-
[435] families. Besides, consideration must be paid to the fact that gold is not only a kind of security but also an article of prestige as well, and a gold necklace of 15 - 30 gram weight valued at 500 - 1,000 baht is usually worn by a rural Thai who can afford one. When a person reappears in the

[TEXT CONTINUED ON PAGE 340]

TABLE 59

FREQUENCY DISTRIBUTION OF NET ACCUMULATION OF ASSETS* BY 96 SAMPLE-FAMILIES
Bangchan, Thailand, March, 1948 -- February, 1953

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Accumulation in Baht	Number of Families
9,000 - 9,999	1
8,000 - 8,999	1
7,000 - 7,999	2
6,000 - 6,999	1
5,000 - 5,999	1
4,000 - 4,999	3
3,000 - 3,999	3
2,000 - 2,999	9
1,000 - 1,999	13
0 - 999	56
-1,000 to -1	2
-2,000 to -1,001	0
-3,000 to -2,001	0
-4,000 to -3,001	0
-5,000 to -4,001	1
-6,000 to -5,001	1
-7,000 to -6,001	0
-8,000 to -7,001	1
-9,000 to -8,001	0
-10,000 to -9,001	0
-11,000 to -10,001	1
Total	96

Mean . . . . 885 baht
Median . . . . 113 baht

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* Includes net purchases of land, gold, and major household equipment.

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434 village after long absence, his achievement will be judged not by the words from his mouth but by whether he has less or more gold than the time he left the village. The importance of gold as a prestige item being as it is, it is not surprising at all to see that a farm operator who did not have any gold will tend to buy a necklace when he receives a lump sum from the sale of rice although he knows that the amount would not last until the next harvest even without that extra expense on the necklace. When this farm operator ran out of money say in July or August, he would rather go into debt than part with that necklace if it really is his only adornment. Tables 57 and 58 show that within the five-year period there were 48 families buying in gold as against only four families selling out gold and that the average for those buying in was 1,341 baht per family while the average for those selling out was 3,038 baht, indicating that when financial pressure arose it was the families having more gold than necessary for display that tend to sell it. Realizing this situation, the author thinks that it is justifiable to give an allowance of about 1,000 baht for gold purchased for prestige purposes. If we agree on this point, there would remain only 34 families demonstrating accumulation of wealth, possibly through internal savings.

Debt Situation

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511 In order to understand the debt situation in Bangchan, it is necessary to distinguish debts created by purchasing goods on credit, which we shall henceforth call credit

426 511 purchase, from debts created by loans. The tendency among policy makers and scholars to use the general term "debt" without specifying which is which has often led to confusion which we shall see later in this section.

*128 Debts, both credit purchase and loans, are the most difficult subject of this study as far as information gathering is concerned. In a culture where prestige counts more heavily than profit, this is a delicate topic from which an ordinary informant usually shies away.

*128 426 511 Although it was realized that farm indebtedness was very essential in the understanding of the economic condition of farm operators in Bangchan as well as elsewhere, in the first year of our study (during 1948-49) only fragmentary information was obtained and we were unable to present comprehensive statistical statements as to the incidence of particular types of credit in the preliminary report in which only categories were given. Since these categories are valuable as background information, they will be restated as follows:

Types of credit

1. According to length of the term
    - a. Short term -- a few months
    - b. Long term -- one or several years
2. According to amount
    - a. Small -- less than 1,000 baht
    - b. Large -- 1,000 baht or over
3. According to the nature of relationship between parties to the loan
    - a. Among blood relationship or close friendship
    - b. Others

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4. According to type of security, if any
    - a. Land
    - b. Gold, jewelry, or other movable asset
    - c. No security

5. According to the nature of the contract
    - a. Oral contract
    - b. Written contract

6. According to rate of interest
    - a. High
        - (1) For small loans, from 5 per cent per month and over
        - (2) For large loans, from 2 1/2 per cent per month and over
    - b. Low -- anything lower than above. Some rates would thus be considered low even though they were in excess of the maximum legal rate of 1 1/4 per cent per month
    - c. No interest

Types of source of credit

1. According to location
    - a. Local -- within the village or immediate neighborhood
    - b. Near -- in more distant hamlets in Bangchan and Kannayao Communes, in the market town of Minburi, and in nearby villages like Bangkhuad or Wat Khoo.
    - c. Far -- in Bangkok and such towns as Dhonburi or Nonburi.

2. According to lender
    - a. Non-affluent persons who give the loan only on the appeal of a relative or friend in need
    - b. Affluent farmers who lend money for interest as a secondary income
    - c. Villagers whose primary source of income is money-lending
    - d. Chinese rice dealers residing nearby who regularly buy local rice surpluses. These dealers lend money for the purposes of:
        - (1) Gaining income from interest -- usually loans are small with high rate of interest
        - (2) Promoting a rice trade relationship with borrowers -- usually loans are small with low rate of interest or no interest at all
    - e. Local store-keepers sell items on credit -- the amount extended depends on character.
    - f. Money-lenders in Bangkok and other large population centers -- usually mortgage term is required.

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In our second visit during 1952-53 our informants appeared to talk more freely on the topic of debts, especially when they were interviewed on the kinds and amounts of special expenses and receipts. At the beginning we did not ask our sample-operators direct questions on the amount of credit purchase or loan they were having. Only casual information pertaining to debts that arose during the discussion of related topics was noted and filed separately by the informant and also by the person referred to both as a lender and as a borrower. It was noticed that while most informants did not want to lay bare the whole situation of their debts, they were rather cooperative and sometimes even eager to make partial statements as long as an answer to the blunt question "How much do you owe now?" could be avoided. For example, one of the 96 sample-operators was telling the author the amounts of outstanding debts of some of his fellow operators (ranging from 3,000 baht to 15,000 baht) and proceeded on to generalize that rice farmers had to go into debts at one time or another. The author, thinking that that was the most opportune time to ask the man about his own debts, raised the blunt question just mentioned. The informant replied, "Just about the same amounts as these people are owing." He then changed the subject, indicating an unwillingness to give the exact amount of his outstanding debts. In the conversation that followed, however, he eagerly stated that he had been able since 1948 to clear off as much as 21,000 baht of debts. When asked how much a proportion

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that was to the total amount of his debts, he paused to calculate and then said it was exactly three-fourths of the total. The author then asked whether he was right in figuring that the man's current outstanding debt was 7,000 baht. The informant admitted that that was the correct figure.

There were, however, some twenty farm operators in our sample who took the author as one of their family members, and were thus very cooperative in giving any information that the author wished to have. Thus, by the end of 1952 we had a considerable amount of data on loans. Constantly checking available information in the files, from the dry season of 1953 onward the author put more effort in getting the debt situation of each of our 96 sample-families, concentrating first on the extent of loans and their respective interest rates. During the inundation period of 1953, effort was shifted to getting information about credit purchases and their respective rates of interest which were brought up to date as of December of the same year. Information on loans was also brought up to date at this same time which may be considered as the end of business year because the early varieties of rice were being harvested at this time of the year. Table 60 shows the classification of farm operators according to kind of debts involved as of the time immediately preceding the sale of the early varieties of rice.

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It is seen that there were only two non-responses out of the total of 96 sample-families. Among these 94 farm

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TABLE 60

CLASSIFICATION OF 96 SAMPLE-OPERATORS ACCORDING TO OUTSTANDING DEBTS AS OF DECEMBER, 1953
Bangchan, Thailand

Classification	Number of Operators	Amount of Debt in Baht		
		Long-term	Credit Purchase	Total
No debts of any kind	37	--	--	--
Long-term debts only	15	90,600	--	90,600
Credit purchase only	23	--	23,870	23,870
Long-term debts and credit purchase	19	65,850	13,850	79,700
No response	2	--	--	--
Total	96	156,450	37,720	194,170

*128 operators reporting their debt situation, 37 had no debt
426 of any kind, 15 had long-term debts only, 23 had credit
511 purchases only, and 19 had both long-term debts and credit purchases. Frequency distributions of credit purchases and of long-term loans are shown in Tables 61 and 62 respectively.

426 The debt situation in Bangchan can be best revealed
829 by quoting directly some of the remarks made by villagers
511 as follows:

"Rice farmers must have debts. Whoever can so manage to avoid debts should be placed on the financially sound list."

"I have been thinking, all day and all night, of the way to avoid debts -- and all in vain. They finally come to a total of one thousand baht with five hundred baht interest every year. I clear them all every year also. Those who cannot clear this kind of debts are sure dead."

"I always pay cash -- afraid of debts."

"Money-flower[8] (a direct translation of the Thai word for interest) is really a peculiar kind of flower. It blooms best in times of drought and flood."

426 Apparently, the term "debts" as used in the above
511 quotations refers primarily to credit purchases. It is not difficult to see how these credit purchases have become
000 institutionalized in the rural areas of Thailand. Writing

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[8] Thai word for interest is dorq-bia (lit., flower of money).

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TABLE 61

FREQUENCY DISTRIBUTION OF CREDIT PURCHASES OF 96 SAMPLE-OPERATORS
Bangchan, Thailand, December, 1953

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Amounts in Baht	Number of Operators
3,500 and over	1
3,000 - 3,499	1
2,500 - 2,999	1
2,000 - 2,499	2
1,500 - 1,999	2
1,000 - 1,499	11
500 - 999	14
Under 500	10
No credit purchase	37
No response	17
Total	96

Mean . . . 898 baht for those reporting any credit purchase

Median . . 911 baht for those reporting any credit purchase

TABLE 62

FREQUENCY DISTRIBUTION OF LONG-TERM LOANS OF 96 SAMPLE-OPERATORS
Bangchan, Thailand, December, 1953

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Amounts in Baht	Number of Operators
30,000 and over	1
20,000 - 29,999	1
10,000 - 19,999	1
9,000 - 9,999	0
8,000 - 8,999	2
7,000 - 7,999	2
6,000 - 6,999	1
5,000 - 5,999	2
4,000 - 4,999	2
3,000 - 3,999	5
2,000 - 2,999	6
1,000 - 1,999	10
Under 1,000	1
No loans	60
No response	2
Total	96

Mean . . . 4,601 baht for those reporting any loan

Median . . 2,850 baht for those reporting any loan

*243 17 43 Writing on economic change in Thailand since 1850, Ingram points out that soon after the Bowring Treaty (1854) the population of Thailand tended to specialize more and more in the production of one major crop (rice) and a small number of other primary products, selling these products for money, and using the money to buy various articles of consumption. "Money thus came to play an increasingly important role in an economy in which it had formerly been of but minor significance. When Western traders were freed by the Bowring Treaty to put such products as cheap cotton prints on the Thai market, the people bought these products and, if they could not buy they sought a source of money income. Money could most easily be acquired by producing some commodity for the export market. As villages and households turned to the production of money crops, and as they began to purchase bright-colored garments from the traders, the household crafts declined. Cotton fields were perhaps used for rice or abandoned in favor of land suitable for rice. With the money income earned through the export market, the farmer bought the goods he had formerly made for himself."[9] *243 178 426 43 The money economy had brought along its inevitable companion -- credit, which had become accentuated by the fact that Thai rice farmers received their principal incomes only once a year. There has been a tendency to trace the perpetuation of farm indebtedness to farm poverty which is in turn traced to low productivity in underdeveloped areas. While this is

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[9] Ingram, op. cit., p. 36.

*243 178 426 43 perfectly true especially among the under-sized farms in Bangchan, there is still to be explained why more affluent farm operators are also continually in debt. It has been observed that when people come into contact with superior goods or superior patterns of consumption, with new articles or new ways of meeting old wants, they are apt to feel after a while a certain restlessness and dissatisfaction. Their knowledge is extended, their imagination stimulated; new desires are aroused, the propensity to consume is shifted upward. This principle according to which individual consumption functions are interrelated was propounded by Duesenberry, who calls it the "demonstration effect."[10] When the list of new items of consumption is checked, it appears that this principle of demonstration effect has demonstrated itself very clearly in Bangchan.

426 432 *[128] Table 63 shows that in the majority of cases credit purchases bear an interest of 50 per cent per season, ranging from 0 to 67 per cent. Information from sources other than our sample farm operators reveals that two methods of interest charging were practiced by Bangchan storekeepers and peddlers. One method was to charge 40 per cent interest on credit purchasesmade during March - May, 30 per cent during June - the first half of November, and no interest on purchases madein the second half of November and after; all these rates were charged on the assumption that accounts would

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[10] This is about the receipt from 8.4 rai in 1953.

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TABLE 63

CLASSIFICATION OF CREDIT PURCHASES ACCORDING TO RATE OF INTEREST CHARGED
Bangchan, Thailand, December, 1953

Rates of Interest In Per Cent Per Season	Number of Cases	Total Amount of Credit Purchase
		baht
0	4	1,100
15	1	3,000
50	37	33,320
67	1	300
Total	43*	37,720

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* One operator reported two credit purchases at different rates of interest, so there were 42 operators involved.

426 be settled at harvesting time in December or January. If
432 buyers failed to settle their accounts at harvesting time, a flat rate of interest of 5 per cent per month would be charged on the total amount (principal plus interest) until the whole debt was settled.

Another method was more simple: 50 per cent interest was charged to the amount purchased regardless of the time of purchase. The only exception was that no interest was charged on purchases made after the first half of November. Here, again, the assumption was that accounts would be settled at harvesting time. In case buyers failed to settle their accounts at the specified time, the same rate of interest of 5 per cent per month was charged on the total as in the case of the first method.

Our records show that there were nine among our sample-operators who failed to clear their credit purchase accounts at the harvesting time of the 1951-52 crop. These accounts, principal as well as interest, were considered as loans with interest rate of 5 per cent per month or 60 per cent per year payable at the harvesting time of the next crop, that is the 1952-53 crop. The shifting of purchase accounts into loans was done in order to simplify bookkeeping work on the part of both debtor and creditor, for these delinquent customers were likely to start their credit purchases again in order to get by until the next harvest. The total account of these nine operators was 19,550 baht, averaging 2,172 baht per case. This appears

426 in Table 64 under the item of loans with 60 per cent interest.
412 It is seen that these operators would have to pay an average of 1,303 baht as annual interest for this account alone. This explains why it was claimed by the villagers themselves that "those who cannot clear this kind of debts are sure dead." One way to avoid this adversity was to seek a long-term loan at the ordinary rate of interest of two per cent per month (Table 64) to replace the high interest loan created by credit purchases. In the previous section on special receipts, it was mentioned that 16 of a total of 29 farm operators in our sample who had sought loans during the past five years said that the loans were needed to defray ordinary household expenses. Obviously, the nine operators had tried to get loans with lower rates of interest to settle their accounts with the storekeepers but they could not get any.

Table 60 shows that of a total outstanding debt of 194,170 baht, more than three-fourths was in the form of loans and less than one-fourth was in the form of credit purchases. Although the majority of cases of aquisition of loans were found to have as their purpose the clearing of higher interest bearing debts, quantitatively speaking each of these was a small loan. Most other loans were sought for land purchases and buffalo purchases. Although these latter were fewer in number, they were larger in amount. It may then be said that a major portion of loan monies were sought for investment or productive purposes while

[TEXT CONTINUED ON PAGE 355]

TABLE 64

CLASSIFICATION OF LONG-TERM LOANS ACCORDING TO RATE OF INTEREST CHARGED
Bangchan, Thailand, December, 1953

Rates of Interest in Per Cent Per Year	Number of Cases	Total Amount of Long-term Loans
		baht
0	1	700
12	6	21,666
15	2	5,667
18	1	1,600
24	15	82,267
30	1	3,000
60	9	19,550
not reported	2	22,000
Total	37*	156,450

* Two operators reported several loans of different rates of interest: one, three loans -- and the other, two such loans. So there were actually 34 operators involved.

426 credit purchases were almost entirely for consumption
432 purposes. The distinction can then be drawn that whereas credit purchases with high rates of interest indicate a shortage of cash due primarily to poverty, loans with lower interest rates do not necessarily serve as such an indicator. Thus, any survey bringing out only the total amount of debts does not shed as much light on the economic situation of the area as it would if the debts are itemized into loans and credit purchases.

Another important point is that farmers tended to clear off their credit purchase accounts the moment they were in a position to do so because they did not want to bear the burden of a very high rate of interest. Even in cases where they had a more pressing need for the use of the cash in hand during harvesting time, their creditors would be around to demand the settlement of debts. To these creditors, a relatively high return of five per cent per month was no longer a good business, for it is obvious that those farmers who would not settle their high interest bearing accounts during harvesting time must certainly be hard up and hence a poor risk. Besides, it will take another full year to collect the debts if they could at all. As a result, most of credit purchase accounts were usually cleared in Januaryof each year when farmers started to sell their early varieties of rice. It is seen, then, that for each year the total amount of credit purchase accounts was highest in December and lowest by the end of January, if not nil.

426 Thus, figures of total debts alone are almost meaningless
432 unless they are itemized and the date when such accounts
*128 are outstanding is specified.

*128 Cash Situation and Role of Paddy

434 It is not the purpose of this study to quantify the cash situation in the village. Even mere estimation would already be too ambitious a task for a study of this nature. We propose, therefore, to give only an outline of the cash situation with the hope that it may serve as background information for further research along this line.

434 1. Extent of money in circulation

a. Incoming

Village net exportable rice: Total crop -- seeds (1 1/2 tang per rai) -- amount consumed by the family (30 tang per man-unit) -- feed or amount consumed by poultry (4 tang per chicken-unit: rooster, 1 unit; layer, 1 unit; chic, 1/4 unit; duck, 1 unit).

Village net exportable poultry products: Total egg production -- amount locally consumed, and total young roosters (7 months old) -- amount saved for breeding purposes.

Money regularly earned from outside sources: wages and salaries (teachers, headmen, janitors, workers on highways, and other workers drawing pay from outside sources); rentals (paid to village residents owning lands in other villages); remittances from outside; dividends if any.

Exportation of other products: mushroom, lotus.

Loans obtained outside the village.

Settlement of loans extended to outsiders (very limited, if any at all).

Sales of lands, gold and jewelries, capital goods to outsiders.

434 Odd receipts: lottery prizes, gambling, etc.

b. Outgoing

Imports: Several items of food, clothing, stimulants, medicine, toilet, fuel; building materials; buffaloes, farm implement, farm materials; gold and jewelries and other articles of adornment; stationary (very limited); ordination and other ritual items.

Outsiders' regular earnings in the village: rentals of land owned by outsiders, interest on loans and equivalent extended by outsiders, wage paid to outsiders (limited to peripheral areas).

Taxes, contributions and fees: land taxes, fees and contributions paid to cutsiders.

Purchases of lands owned by outsiders.

Settlement of loans extended to outsiders.

Investment outside the village (one Bangchan resident owns shares of an electricity concern in Minburi totalling 5,000 baht, the same person had invested a total of 10,000 baht on a fishing enterprise in a coastal town).

Remittances: for educationof children sent to Bangkok.

Travelling expenses and pilgrimage.

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458 2. Seasonal fluctuation of money supply

Money supply fluctuates very highly in the village because of pronounced periods of sale of paddy and of the method of payment for it. There are two periods of sale: during late December and March, and during July and November. There is practically no sale between March and July because canals are impassable during this more or less dry period. Actually, it is dry from March to May; after that although rain has started, the water level in the canals is not high

434 enough for efficient movement of paddy.

458 The general practice was that right after harvest immediate sale of paddy was necessary for settlement of credit purchase accounts and rentals. Another sale was perhaps necessary a few days later for living expenses which had been postponed during the cash-scarce [796] period before harvesting. Then another sale might be made in order to have cash to pay for building materials needed for repair work which was usually done during this time. Just before March a final sale for this first period was made in order that the family may have cash enough to last through July. The money was to cover contributions to various rituals to which the family had already been invited, and perhaps to cover ritual sponsor by the family itself. Besides, there was still need for cash for each family member to carry around during this period of festivals.

*243 Villagers said that few farm operators had any
434 paddy left for sale in the second period (July - November).
458 This was contrary to our findings as shown later in Table 65. Perhaps, they were thinking of conspicuous sales of large amounts by farmers having say over 500 tang of paddy for sale in the second period.

*[128] During the last few days of March, 1953, when paddy sale had apparently ceased, we made a round call covering the homes of all 96 sample-families and checked the amount of paddy on hand as of the end of March.

[TEXT CONTINUED ON PAGE 360]

TABLE 65

FREQUENCY DISTRIBUTION OF INDICES OF CAPITAL FORMATION POTENTIAL OF 96 SAMPLE-OPERATORS
Bangchan, Thailand, March 31, 1953

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Class Intervals tang	Frequency
2,000 and over	1
1,000 - 1,999	1
900 - 999	1
800 - 899	0
700 - 799	2
600 - 699	0
500 - 599	1
400 - 499	6
300 - 399	5
200 - 299	8
100 - 199	15
0 - 99	22
-100 to -1	25
-200 to -101	9
Total	96
Mean	145 tang
Median	65 tang

*243 *128 433 434 [574] This was one of the easiest jobs of the whole study. There were few cases where we did find anybody at home and there were many more where only young children were seen. Since a Thai farm home is considered an open house to fellow villagers, we simply took liberty of walking right through and made an inspection by ourselves. Thus in a period of less than a week we were able to secure the figures of paddy stock on hand of every single operator in the sample.

The amount of paddy stock alone simply indicates but not represents sale in the second period, for a certain portion must be saved for seeds, consumption and feed. It is rather simple, however, to calculate the amount saved, for we were already in possession of work areas from which the amount of seeds may be estimated and we knew the size of the family (in terms of both actual number and consuming units) from which consumption may be figured.

*243 432 434 In this second period, sale was made when the farmer thought the price was high enough. Usually, the prices of paddy were about 15 - 30 per cent higher during this period than in the first period when supply was high. The rate of shrinkage should be taken into consideration, however, for prices are expressed in volume. It is rather unfortunate that we do not have any official record for this vital rate of shrinkage. In our daily log, however, the following testimony appears:

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Farmer A: "I put my paddy in the warehouse in the first half of the second lunar month (December 17-31, 1952). In the second half of the fourth lunar month (March 1-15, 1953) I sold it (and thus measured it again). I found that within these two and a half months of every 100 tang only 87 tang remained."

"Judging from experience, paddy starts decreasing its size and weight through the process of evaporation since the time of harvesting, and it is not before July that it becomes dry enough to retain its size and weight thereafter."

Farmer B: "Is it not possible that your 13 per cent loss was due to the chickens?"

Farmer A: "No. During that time (December-March) the chickens were well fed. There was a lot of paddy scattering in the home yard. They would not bother going up into the warehouse (mat bins)."

C (of Cornell group): "Lazy chickens might feed right in the mat bins with plenty of paddy."

Farmer A: "I don't think so. Lazy chickens would not take the trouble to fly. They'd rather prod around the home yard."

Another reason for sale during this second period, in addition to good prices, was a prospect of good investment, mostly loans, mortgages, or land purchases.

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426 It has been observed that most business transactions were done on credit. When the farmer went to town to receive payment for his paddy from the rice dealers, he would at the same time settle his accounts with the lumber yard and several dry-goods stores. So actually in many cases cash was not brought into the village except in limited amounts.

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[674] People do not like to carry a large amount of cash around in the village for inherent fear of robbery which rarely happens. Chinese rice dealers prefer to pay for the paddy they bought at their own home. If sellers insist that the money should be brought to them in the village, the dealers will break the total of say 5,000 baht into one or two thousand baht at each of three or four payments.

Villagers also do not like to keep a large amount of cash at home. In case the payment for paddy sold is to be made at the farmer's home, he would arrange for borrowers to come to his home at the same time so that the money will be immediately passed on to the others, thus avoiding risk involved in keeping cash. One of our sample operators said that he arranged a few years ago that a large sum of 10,000 baht be paid at his home so that he might pass the whole amount immediately to the owner of a parcel of land he agreed to buy. Everybody in his household was frantic when the money was received from the Chinese dealer but the

432 seller of the land did not show up until the next morning. Recruit had to be made for guns and men to guard the money for that whole long night.

3. Scarcity of money

*243 Scarcity of money exists in Bangchan because
434 there is, relative to the demand for purchased goods and services, only a small margin between the price received and the cash outlay of producing paddy. Another reason is that most farms are too small, thus yielding small net cash incomes to the majority of farm operators in the village. Small incomes of farm operators who constitute the core of village economy means also small incomes of the rest of the village population whose financial condition directly or indirectly depends on incomes of farm operators.

Scarcity of money is directly evidenced by
426 458 shortage of money during theperiod from July to December. It is also indicated by high rates of interest on credit purchases and loans sought in the village.

The problem of scarcity of money has been rendered
434 more acute by the fact that affluent farmers do not
454 like to keep cash at home or put it in liquid form such as in saving bank in the nearby market town, but prefer to invest it in a more or less non-liquid form such as loans or land purchases. Some of those who
[796] had accumulated a large amount also tend to spend it on sponsoring of rituals costing as high as several

434 thousand baht to more than ten thousand baht which
454 796 is a real drain on the village cash supply.

These huge expenses are, however, partially
compensated by such items as loans sought from outside
[426] or sale of lands and other assets. It cannot be
expected, however, that these items would provide
enough supply of cash to bring down the rate of interest
in the village.

4. Role of paddy

*243 Paddy is extensively used in the village as a
436 medium of exchange. It is used in both small transactions
of a few baht and large transactions of several
thousand baht. Thus paddy stock may almost be considered
as equivalent of a bank balance.

*243 The most important consumption uses of paddy
433 are as seeds and for human consumption. In order to
436 make it really comparable to a bank balance, allowance
454 must be made for the amount necessary for seeds and
human consumption although the amount for chicken feed
may be dispensed with because the farmer may choose to
*128 drop his poultry enterprise. On this basis, we have
*243 arbitrarily coined a term "index of capital formation
433 potential with present levels of living" to represent
436 the amount of paddy in tang which is left at the operator's
454 disposal at the end of March after allowance
for seeds and family consumption has been made. No
allowance is made for special consumption expenses such

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as sponsoring of ordination and other rituals. Algebraically, the formula for the index of capital formati n potential may be expressed as follows:

$$I = P - (R \times 1\ 1/2) - (C \times 30)$$

where,

I is index of capital formation potential
P is paddy stock at the end of the first phase of sale (about March 31)
R is area in rai devoted to rice
C is the family size expressed in consuming units, whereby adults age 15 years and over are considered to be one consuming unit each and children age 14 years and under are considered to be one-half unit each.

The formula is constructed under the following assumptions:

1. Creditors and landlords demand settlement of debts and rentals immediately after harvest.
2. Farmers prefer to keep paddy rather than cash.
3. Before the end of March, affluent farmers sell only a certain part of their crops which would bring just enough cash to last until the next sale in July or after.
4. Amount of seeds necessary to plant one rai of rice is 1 1/2 tang.
5. Paddy consumption is 38.3 tang annually per consuming unit (Table). The surplus held on March 31 must last for 9 1/2 months before the next harvest can be used. Consumption during these 9 1/2 months is calculated at 30 tang per concuming unit.

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Table 65 shows the frequency distribution of index of capital formation potential of 96 sample-operators as of March 31, 1953.

It is seen that the median index of capital formation potential is 65 tang. The abnormally high indices of two operators, one over 1,000 tang and the other over 2,000 tang, have pushed the mean index up to 145 tang. It is seen also that there are 34 operators whose indices of capital formation potential are negative. Since there 34 operators constitute more than one-third of the sample, the situation may be said to be rather disheartening. This means that a good proportion of farm operators do not produce enough paddy even for their own consumption after having to pay for debts, rentals, and other immediate requirements.

In the opinion of the author, index of capital formation potential in the sense that is here used is a very useful device for a quick survey of economic condition of most rice growing areas of Thailand where the single-crop system is practiced and where there is relatively little secondary income.

PART III

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ECONOMIC PROBLEMS OF BANGCHAN

CHAPTER VIII

SALIENT FEATURES OF ECONOMIC PROBLEMS OF BANGCHAN

*128 Problems of economic significance have been constantly brought out during the course of discussions in Part I and Part II, some explicitly and others implicitly. In this chapter we shall undertake to restate these problems and summarize their salient features.

Low Incomes

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434 Data earlier presented show that the basic problem of Bangchan is that incomes of farm operators are low. Low income is due on the one hand to low return from rice, and on the other to limited earning opportunity from other sources.

Return from rice depends on yield, cost, price received, and size of the farm. Among these four factors, yield did not appear to be an immediate problem contributing to low return of Bangchan farms, since a five-year average of 28.8 tang per rai for Bangchan can be favorably compared to those of most of the other rice growing areas in the country. Yearly fluctuation of yield, nevertheless, shows that there is room for yield improvement through application of fertilizer, use of better seeds, and more efficient control of water supply.

*243 433 434 The cost of producing rice in Bangchan of 6.76 baht per tang of paddy in 1948 (according to our method of calculation earlier described) appears to be rather high in relation to an average price of 7.86 baht received in the same year. A net gain of 1.10 baht per tang of paddy seems to be inadequate with an average annual output of 1,081 tang of paddy per farm; even though every farm operator still has in addition incomes for family labor (in terms of value of family labor including himself) and from ownership of farm equipment (in terms of interest), and some operators who work on their own land still have additional incomes from ownership of land (in terms of implicit rent). As things stand at the present, this calculated cost can hardly be reduced in the near future unless there is an abrupt change in technology.

Many Bangchan operators appeared to thrive well under this condition of high cost because about three-fourths of the total cost of production was imputed and did not require an immediately cash outlay. Some of these cost items were hidden in the form of gradual depreciations which were not actually provided for each year. These would certainly be realized, however, when for example buffaloes died or equipment broke down. Even the imputed cost for family labor could not indefinitely be postponed. Family workers did not demand a lump sum payment like wages for laborers, but they had to be fed and clothed, and certainly personal expenses had to be allowed for them. Some 000

*243 Some farmers had artificially reduced their operational cost by
434 utilizing free labor of transient members of the family,
464 who would not stay long if they were not adequately taken
care of. These farmers would have to resort to pieceworkers
or hired laborers when transient members decided to leave
them.

*243 The farm price of paddy was adversely affected by
434 the government control of rice export. It was estimated
655 that huge profits of no less than 100 per cent had been made
each year by the government through its monopoly over and
later control of rice export and foreign exchange control.
This will be dealt with separately later in this chapter.

*243 Although the average size of farm of 30.7 rai for
434 Bangchan can be favorably compared to the average of 23.1
423 rai for the Central Plain, this does not mean that size of
farm is not a problem contributing to low returns from rice.
[464] It was pointed out earlier that there was a condition of
disguised unemployment among Bangchan operators. Small size
elsewhere simply indicates the widespread nature of the
problem of disguised unemployment among farm operators in
the Central Plain.

*243 Limited earning opportunity for incomes from sources
434 other than rice is due to the fact that at the present stage
of technological development no other crop can be profitably
grown in rotation with rice because of agronomic limitations.

*243 The inundation period from the middle of September
434 to early December, during which time no work is needed on
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243 the rice enterprise, cannot be devoted to gainful
221 utilization of labor because: (a) there is not enough space in
434 the homelot, the only place above water; (b) poultry is not a competing crop as long as it is raised naturally in limited number. It becomes a competing crop when it is raised
[235] commercially. Commercial raising of poultry in Bangchan is handicapped by locational reasons (far from market and far from sources of feeds other than paddy). It is further handicapped by a higher chance of contamination which is true in such a geographical condition as prevailing in Bangchan; (c) another factor limiting an opportunity for growing a secondary crop during this period is that cash is most scarce in this time of the year and interest rate is highest. Any cash outlay for investment is thus discouraged. Farmers who have any cash at all will do much better by straight lending, or disguised lending in the form of petty trade on credit putting a high premium on credit purchases of 50 per cent extra on articles payable in two or three months; and (d) opportunity for wage earnings is also limited during this period because farmers do not need any help at this time of the year, and because successive rains prevent extensive public work and large scale construction.

It cannot be said, however, that there is no possible way for farmers to be gainfully employed during this period of inundation. Researches along this line are needed, ones that should take into consideration details of climatic, technical, economic, and social conditions of the village.

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The lean time from the middle of February to the end of May is devoted by some villagers, mostly young men, to wage earning outside the village. The size of this temporary labor migration depends on the job opportunities, and these job opportunities depend largely on personal contact. Seasonal off farm jobs are: (a) crude carpentry work usually on nonpermanent construction where cheap temporary labor is preferred; and (b) plantation work in the sugar cane region of Cholburi some eighty miles east of Bangkok.

Inherent Excess of Expenses over Incomes

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The prevalence of debts in the form of credit purchases among Bangchan farmers indicates an excess of expenses over incomes. It has been shown that most cash loans were sought to clear high interest bearing credit purchase accounts, although some were for productive purposes. Even in this latter case, it has been observed that farmers usually borrowed no more than an amount that was immediately needed together with cash on hand to pay for the capital investment. This means that after such capital purchases there was less cash for the household and operating expenses, and so there would be a higher credit account to be settled in the following harvest.

Low incomes coupled with relatively high expenses leave little or no room for internal savings.

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The situation is aggravated by an increasing rate of consumption relative to the ability to produce. While

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178 production method and farm organization remained the same
433 throughout, there had arisen in the course of the past four
434 or five years new items of consumption including wrist watches, fountain pens, hair do, Coco-cola, invitation cards, admission to Miss Thailand contest, etc., which demonstrate the operation of the principle of demonstration effect par excellence. It is not difficult to see, then, that any chance increase in cash incomes due to favorable weather and economic conditions tends to be absorbed in consumption.

While consumption correspondingly expands with an increase in income, it does not decline with a contraction of income -- at least not in the same proportion. This is the principal reason for farm poverty in rice growing areas where only a single-crop system is practiced and where fluctuation of crop yield is a normal phenomenon.

As a result, the excess of expenses over incomes
[426] tends to persist. High rates of interest also have made this excess greater and greater among those who fail to make proper adjustment in their credit situation. Thus, the less affluent farmers are not only poor but are actually getting poorer and poorer.

Population Pressure

161 While low incomes and inherent excess of expenses
434 over incomes are basic problems of Bangchan, discussions in the early chapters reveals that there are some factors contributing to the acuteness of the basic problems. One

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434 among these contributing factors is population pressure.

*243 Disguised unemployment in the case of farm operators
161 and their family workers and actual unemployment in case of
434 farm laborers indicates a condition of over-population in
464 Bangchan in the sense that a certain part of its population
can be removed without materially reducing total production in the area.

178 In view of a continually decreasing supply of fish,
226 it may be said that the situation has reached the point where
433 it not only affects the per capita income of Bangchan resi-
262 dents but actually exerts pressure on means of subsistence.
There are several indications of decreasing supply of fish and other marine animals in the village. First, it is the consensus of opinion gathered by our daily informal talk with villagers non of whom was found to hold a contrary view. Second, a passage in our 1948 log, "X is very lazy. Everybody here in Bangchan catches shrimps and makes his own shrimp paste. He alone does not catch shrimps even though he is among the poorest," indicates that purchase of shrimp paste was in 1948 an exception rather than a rule. In 1952, however, it was found that a total of 22.7 kilograms of shrimp paste consumed in a year by an average family, 6 kilograms, or more than a quarter, was purchased. In this latter year, 83 baht worth of fish and 54 baht of fish sauce were purchased by an average family in addition to shrimp paste as against negligible amounts for the same items in 1948 (we did not conduct a systematic consumption

178 survey in 1948, the "negligible amounts" comes from daily
226 talk with Bangchan residents). Third, several informants
433 testified that the amount of fish caught from the same pool
[262] by the draining method had been decreasing each year. One of these gave the following comparative figures for fish caught from the same pool on April 8 - 10, 1953 and on approximately the same time of the year in 1952 as follows:

Kind of Fish	Number Caught in 1953	Number Caught¢ in 1952
Pla Salid	400	800
Pla Salad	100	200
Pla Kasong	50	120
Pla Chado	6	15
Pla Krai	1	--
Pla Doog	50	50
Pla Mor	20	25
Pla Chorn	150	300
Large turtle	5	3
Small turtle	7	3
Eel	5	5

Others also gave the 1953 figures, but could not itemize the 1952 figures; they only said that they "got much more than this year."

226 There had been until 1952 no positive program for
654 fish conservation; only negative measures have been taken, such as the Ministry of Agriculture's ordinance against fishing by certain methods at certain times of the year. In 1952, however, the Government began an extensive program of introducing a new variety of fish, Pla Mor Thed, into rural areas of Thailand. This new variety has been claimed to grow faster than the native varieties. While this program cannot as yet be appraised, a point of observation may be

*243 Finally, it has been pointed out that the kind of
161 training and the type of financial preparation given to young
178 married couples have served only to confirm Bangchan people
464 to their preference for rice cultivation. This together with limited job opportunities open to them elsewhere have tended to keep the villagers on the farms, and thus have tended to regenerate the condition of population pressure in Bangchan.

Lack of Effective Control and Regulation of Water Supply

*243 Another contributing factor is the lack of effective
458 control and regulation of water supply, which has caused annual fluctuation of rice crop. On the whole, this crop fluctuation is not as high as is the case in most of rice
[731] growing areas elsewhere. Famine certainly has not been known in Bangchan. Nevertheless, it is a certain sector of rice growers -- the marginal farmers with limited ability to adjust or with relatively little command over capital -- who are seriously affected by annual fluctuation of rice crop.

*243 When affluent farmers have a poor crop, their credit
426 purchase accounts may go up beyond the normal level, but they are usually in a position to clear this type of high interest bearing debts at the end of the business year by their net cash incomes or at least by securing loans with lower rates of interest to pay the accounts. On the other hand, marginal farmers are not in a position to seek low interest bearing loans. In case of crop failure, therefore,

*243 426 these marginal farmers who cannot settle their credit purchase accounts have to bear the burden of high interests on their accounts which are carried over to the following year.

*243 312 Although weather conditions are not controllable, water levels in Bangchan are subject to partial control through irrigationand drainage. The range of water adjustment for each farm is nevertheless small. At the beginning of the season, there is too little water in the main canals to be accessible to farmers. Thus, even though Bangchan operators are equipped with their own irrigation facilities, they still have to rely entirely on the rains to start their first step of field preparation. Again, during the inundation period the water level in the main canals, which are the only channel through which excess water may be drained away, is too high to permit any draining at all. It is seen, then, that the critical period is almost limited by weather conditions whichvary from year to year.

The problem stated above was recognized as early as 1903 when J. H. Van der Heide, a Dutch irrigation expert who was hired by the Thai Government to draw up an over-all irrigation plan for the nation, published his report suggesting an elaborate plan hinging on construction of a barrage across the Chao Phya River at Chainat.[1] Van der Heide pointed out that besides the improved yields of rice, the

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[1] J. H. Van der Heide, General Report on Irrigation and Drainage in the Lower Menam Valley.

*243 312 reduction in crop failures, and the improved quality of rice, irrigation would also enable each family to cultivate a larger amount of land. The farmer could regulate the softening and flooding of his fields and thereby increase the number of days available for cultivation of rice. Without irrigation the work load was dictated by the rains. [654] This over-all scheme was rejected by the government. Instead, a scheme drawn twelve years later by Sir Thomas Ward, a British irrigation expert, calling for separate small projects was adopted in 1916. Since the main source of water -- that from the Chao Phya River -- was not utilized by this latter scheme, the problem of scarcity of water in the early period of rice season has not been solved. Commenting on this point, Ingram wrote in 1955: "It is perfectly clear that if Van der Heide's irrigation schemes had been pushed forward rapidly, using foreign capital when necessary and domestic revenue where possible, the investment would have proved a sound one for the nation. The crop failure of 1919-20 alone cost the nation more than the entire cost of the works."[2] [654] With loan from the International Bank for Reconstruction and Development, the government is now undertaking the Chainat Project which includes construction of a barrage across the Chao Phya River as envisaged by Van der Heide half a century ago.

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[2] Ingram, op. cit., p. 87.

*243 44 655 Problems in the Marketing of Rice

Another factor which has aggravated the basic economic problem of Bangchan lies in the marketing of rice. In order to meet its contract commitments, as well as to obtain control over the price of rice to domestic consumers, the Thai government declared a monopoly on rice export at the end of World War II. This monopoly enabled the government to appropriate a large part of the high prices received for rice exports. Surplus rice had to be sold to the Government Rice Office at prices fixed in baht. Mills were allowed to sell rice for local consumption, but the entire surplus over domestic needs had to be sold to the government, which resold it to foreign buyers. Internal transport of rice and paddy was strictly controlled, and provincial surpluses of milled rice were delivered to warehouses in Bangkok. The government did not control the price of paddy. It merely bought milled rice for export, and the paddy price was determined by the competition of millers and middlemen, the willingness of growers to sell their paddy, and the rice prices paid by the Rice Office.[3]

*243 439 655 Government profits arose in two ways. First, the Rice Office sold rice to shippers for about 20 per cent more than the price it paid to the millers. This trading profit was considerable because both the purchase and sale by the government were paper transactions involving little expense. Second, a potential exchange profit arose from the fact that

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[3] Ibid., p. 88.

*243 439 655 the export price was expressed in foreign exchange. The Rice Office figured its accounts at the official rate of exchange, and the price in foreign currency was fixed at such a level that even when converted at the official rate the Rice Office could buy rice from millers and still make a 20 per cent profit on the transaction. The foreign exchange proceeds were turned over to the Bank of Thailand. The bank in turn might sell part of the foreign exchange at the official rate, e.g., for certain imports, but it also sold part at the open-market rate of exchange. On this portion it made an additional profit equal to the difference between the two rates. Ingram estimates that for each metric ton of white rice, 15 per cent broken, for which the gross price to miller was 1,306 baht in 1951, the total government profit was 1,304 baht, of which 248 baht was trading profit and 1,056 baht was exchange profit.[4] Another writer estimates that the government's profit from each metric ton of white rice, 5 per cent broken, was 1,650 baht.[5]

*243 435 437 655 661 In 1951, the Ministry of Commerce began to issue a number of permits to export rice against commercial contracts. Since the world price of rice was still above the prices fixed in government contracts, exporters were eager to obtain the private permits, and a lively market for

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[4] *Ibid.*, pp. 89-90.

[5] M. R. Anuporn, "Rice and the Thai Government," *Prachatipatti*, February 5, 1955.

*243 permits sprang up. During 1951 the black-market price for
435 such permits reached U. S. $35 per ton. Officials were
439 obtaining permits for export against commercial contract
655 and promptly selling them in the market. A permit for 10,000
661 tons meant $30,000 even at the low price of $3 per ton, and when the price hit $20-$30, the temptation to bribe the crucial officials was enormous. Millers were eager to get a cut also, and they were reluctant to make rice available unless they got some kind of a premium.[6]

*243 By 1953, however, the world demand for marketable
439 rice began to decline, and it may be said that the rice
433 trade had shifted from sellers' market bo buyers' market. The primary reason for this decline was the recent increase in production in the deficit countries. As a rice exporting country, Thailand was naturally adversely affected. Her position was further aggravated by high production in Burma which offered lower prices in the international market.

*243 In recent years, the export prices of Thai rice had
435 been steadily raised. For a ton of white rice, 5 per cent
439 broken, it was L47 5s in 1951, L50 5s in 1952, and L55 5s
655 in 1953. The decline of demand forced the government to lower the export prices by L1 - L5 per ton for the first time in 1954, and finally to virtually abolish its monopoly over the export of rice in 1955.

Thus, rice export has now become "free", but actually under rigid rules and regulations especially with reference

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[6] Ingram, op. cit., p. 91.

243 439 655 435 to the control of foreign exchange. By abolishing its monopoly over rice export the government simply gives up its trading profit but still retains the huge exchange profit.

It is seen that the government had been strengthening its finances and increasing its revenues through the operations of rice monopoly and exchange control, and at the same time the internal prices of rice were kept at a low level. The largest share of the burden has no doubt fallen on the rice farmef, who receives less than one-half of the paddy price he would have received in a really free market. The lively market for export permits and frequent reported incidents of irregularities by crucial officials mean that the difference between the price that the farmer should receive and the price he actually receives has not all gone to the government revenue. This difference, amounting to no less than a billion baht annually, cannot therefore be expected to be channelized back to the farm. The worst part of the system, however, is that in practice there has been a kind of an upper limit without any corresponding lower limit for farm prices of paddy. Thus, while export prices steadily rose, the farm price of paddy in Bangchan was maintained at 900-1,000 baht per ton during the period from 1950 to 1952. When the export price began to decline in 1953, but in fact it was still well over the 1951 level, the Bangchan paddy price dropped abruptly to 600 baht.

*243 Before War II, the problem in rice marketing had
441 been one of alleged usurpation by the Chinese middlemen -- the rice dealers and the millers. Expert organizational ability, it has been observed, has put the Chinese in control over the internal rice trade of the country. Even now, all the five rice dealers operating in Bangchan are Chinese, and the three largest rice mills in the market town of Minburi are owned and operated by the Chinese. The other rice mill -- the smallest of the four in operation in Minburi -- is owned by a Moslem.

*243 Ingram observes that the postwar system has had the
441 effect of increasing the number of Thai middlemen and exporters.
435 The fixed buying price of the Rice Office introduced a degree
563 of stability into the paddy market and enabled Thai middlemen to compete with the Chinese. Formerly, the price of paddy fluctuated wildly from place to place and from month to month because of the variety of measures used in buying it, because of seasonal variations, and because of the many transactions involving merchandise or loans. Thai middlemen did not have the working capital, the experience, or the trading ability to compete with the Chinese under those conditions. But when the millers' buying prices became fixed within narrow limits for long periods, the middleman function was greatly simplified. No doubt other factors were involved, but people in the rice trade consider the greater stability of prices to be of major importance in the rise of Thai middlemen.[7]

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[7] Ibid., p. 92.

*243 441 563 Relative to the enormous problem created by export and exchange control, the internal marketing problem now appears to be small at least in its relative effect on rice growers. It is true that the Chinese combines in the forms of Rice Dealers' Association and Rice Mills' Association have consolidated economic influence in favor of the Chinese middlemen in Bangkok. But it is equally true that competition among the Chinese rice dealers and millers in the countryside also has worked to the advantage of growers.

It has been observed that the Chinese dealers in Bangchan offer prices to farmers that scarcely differ from prices that the farmers could get from the millers if they were to break the existing pattern and deal directly with the millers themselves. This would often be possible because most of the local farmers possess the large chala boats needed to convey paddy to the mills which are only a few miles away. Actually, the Chinese rice dealers and Bangchan farmers have been observed to be in a rather efficient state of economic symbiosis that compares favorably [186] with most inter-ethnic divisions of labor. Further attestation is found in that there appears to be extremely little anti-Chinese sentiment among the villagers, and this is despite the fact that the national government has from time to time taken somewhat spirited measures against the [426] Chinese. The favors, non-interest bearing loans, and good will gestures accorded the Thai farmers by local Chinese dealers should also be taken into consideration.

*243 Although private rice millers in Bangkok operate
256 with a rather high degree of collusion, in the countryside
472 the many small millers compete actively on the basis of price charged for their services or price paid for paddy or both. The comparatively high capital investment of the enterprise has rendered inter-mill competition in the countryside very intense, and it is obvious that the farmer gains economically from such competition. If somehow the government could, by a carefully conceived gradual program, induce a large number of smaller mills to move from Bangkok to the countryside, the farmer will benefit all the more. Already, the trend has been for gradual business decline for Bangkok mills and business upswing for the countryside mills.[8]

*243 It is rather unfortunate, however, that the government
256 has explicitly taken the view that small rice mills
656 (capacity of five tons and under) in the countryside are
44 detrimental to the interest of the farmer. It is officially held that small rice mills would bring about a large number of middlemen who would then combine to suppress the farm price. Actually, more middlemen tend to produce correspondingly keener competition in the marketing process which is beneficial, not detrimental, to rice growers.

*243 Small rice mills, which may be more conveniently
256 erected in the villages and perhaps with local capital, will
433 reduce the cost of transporting rice by a third, for about two-thirds of the weight of paddy is head rice, the other

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[8] *The Economic Yearbook*, edited by Luan Pannoi, Bangkok, 1951.

*243 256 433 comprising the by-products of milling -- broken rice, bran, and husk. There is still a further saving when paddy is milled where it is produced, for bran would not have to be moved away from the farm as part of paddy to distant mills and then moved back again to the farm where it is bought back to be utilized as feed.

If not hampered by unnecessary government restriction, small rice mill industry will provide opportunity for local investment to which internal savings among affluent farmers may be channelized. The relatively low capital requirement and the simplicity of operation of small movable rice mills have made it possible for many Thai farmers in the northern part of the country to become successful rice millers, and there is no reason to believe that farmers in the Central Plain cannot do likewise.

Scarcity of Cash and Credit

434 4-58 An important factor contributing to the acuteness of the basic economic problem of Bangchan is the scarcity of both cash and credit in the village. Bangchan farmers receive cash from the sale of paddy in two periods -- from January to March, and from July to October. Most sales are expedited in the first period, when rentals and credit accounts are expected to be settled. Farmers also need cash for the purchase of goods they have forgone during the previous work season when they had little or no cash. Since there will be no sale of paddy during April - June when paddy cannot be moved through the shallow water level

434 in the canals, some cash is also needed to last the farmers
453 through the festive and merit-making dry season.

Since most of Bangchan operators are farmers whose incomes are barely or not at all enough to cover their household expenses, very few could hold their paddy stock for sale in the second period when higher prices may be expected.

[454] It has been observed that Bangchan farmers do not want to keep cash in their homes for fear of robbery. This is probably another reason for the withholding of paddy from sale in the first period in addition to the prospect of better prices. These few affluent farmers who have some paddy for sale in the second period have to sell it all before the arrival of new crop which often floods the market and forces the prices down.

43 [426] Farmers usually arrange that payment for their paddy be made in the market town where they immediately pass most of the cash on to their creditors or sellers of the goods they plan to buy on that date. On the way home, they would stop over at the village stores to settle their other accounts. Thus, by the time they are back at home there is not much cash on hand to worry about. The few affluent farmers would do the same thing in their early sales -- that is, they would sell only a small portion of their crop so that there will be only a small amount of cash left on hand by the time they are back at home. In their later sales, however, these farmers must have a large amount of cash. It has

43 been observed that arrangement is often made to pass the excess cash on to other people -- usually borrowers or sellers of land or capital goods.

It is seen, then, that only a part of cash payment for surplus paddy sold by Bangchan operators is brought into the village, and that the amount brought in would not stay long in the village either.

It is also seen that this dread of cash together with the normally low net cash return from rice because of relatively high cost of production have tended to keep the money supply in the village at the minimum level even during the harvesting season.

426 To offset the low money supply, credit is extensively used in the village, especially after July until December when cash received from the sale of paddy has been all used
[436] up and the sale of the new crop has not started. Paddy is also used as medium of exchange.

It has been shown that debt is widespread in Bangchan, and that the modal interest rate was 24 per cent per year for loans and 50 per cent per year for credit purchase accounts. No matter how extensively credit is employed, these high rates of interest indicate that there is still a scarcity of credit itself and of credit facilities in the village.

Scarcity of credit is indicated not only by high apparent rates of interest but also by discounts and premiums of various forms. Some of these are: (a) Toq khao wherein

426 two tang of rice are required to pay at harvest time for one tang of rice borrowed during the cash-scarce work season; and (b) Toq raeng wherein an advanced payment of say 10 - 15 baht is made for a promise to harvest one rai of paddy which normally brings in a cash wage of 25 - 30 baht payable on the day the work is done.

Scarcity of credit and the consequent high interest rates naturally discourage productive investment, for those who need operating capital certainly cannot afford to pay for these high rates of interest and those who have cash at all would do much better by straight lending.

426
471
184 Scarcity of cash and credit in the village is a blow especially to the marginal farmers who comprise the majority of Bangchan operators. These are farmers with a low index of capital formation potential who are often found among the land-thirsty category of operators. It has been pointed out that farmers with a high index of capital formation potential could more easily adjust their credit situation and thus are able to avoid high interest bearing debts. The marginal farmers, on the other hand, cannot do likewise. Scarcity of cash and credit and its consequences -- high interest rates and discounts and premiums of various forms -- have certainly put these marginal farmers at a most disadvantageous spot of receiving less for the same unit of labor and product and of having to pay more for the same unit of goods. Under this circumstance, the gap between the affluent and the less affluent farmers is ever increasing.

CHAPTER IX

CONCLUSIONS

*243 *128 433 In Chapter VIII, we have tried as far as we could to locate salient features of current economic problems of Bangchan, in an attempt to achieve the primary purpose of this dissertation. It is seen that those problems which have been brought to light by available evidences center around low incomes and excess of expenses over receipts. This basic problem is aggravated by population pressure, the lack of effective control of water, complications of the postwar marketing of rice, and the scarcity of cash and credit in the village.

It is seen also that those various points brought out in Chapter VIII have aspects of geographical, technological, social, institutional, and even personal nature. *243 433 On the whole, however, they are interrelated and often integrated. The problem of low incomes, for example, is closely associated with those of population pressure and limited earning opportunities, both of which are affected by soil and water conditions. These have been rendered more acute by suppressed farm prices brought about by the postwar marketing conditions. As a result, expenses tend to exceed incomes -- a condition leading to scarcity of cash

243 and credit, which in turn has caused the rates of interest
433 to be rather high. High rates of interest discourage investment, forcing the farmer to rely solely on returns from rice which is not purely a business enterprise but also a way of life. Rice production is affected by the lack of effective control of water and the small size of the farm which is limited by population and other job opportunities. Low production and relatively low prices of rice result in low incomes, thus completing the circle.

This sort of circular relationships by which the perpetuation of poverty of rice farmers in the Central Plain of Thailand may be explained is known as the vicious circle of poverty. Already, we have uncovered the conditions circumscribing this vicious circle. The task ahead is to break this circle and create an economic environment necessary for the attainment of rural prosperity.

7: Janlekha X-4,5 (1948-1953)p956 AO7 Central Thai AO7
Bangchan

APPENDIX A

TERMS USED IN THIS STUDY

Measurement

104
*[243]

1. Rough rice or paddy: Grains of rice after they have been threshed but before they have been milled.
2. Milled rice or clean rice: Grains of rice after they have been milled.

804

3. One rai equals two-fifths of an acre.
4. One tang equals twenty litres. It is the standard measurement for both paddy and rice. The weight of one tang of paddy varies from one locality to another. On the average, Bangchan paddy weighs about eleven kilograms per tang. The weight of one tang of milled rice does not vary significantly from place to place, the average being sixteen kilograms.
5. One baht (weight for gold and silver) equals fifteen grams.

436 Currency

The basic monetary unit is the baht. During the period of the study, Thailand maintained a so-called open market exchange rate which served largely as the going and legal rate for all commercial transactions other than exported rice and a few specified items of export and import. At the time of the study, this open market rate was about 20.25 baht to one U. S. dollar.

The official rate of exchange during the early post-war period was 10 baht to one U.S. dollar. Following the

436 devaluation of the pound sterling in September, 1949, this official rate was changed to 12.50 baht to one U. S. dollar.

Geographical Administrative Units

The area of Thailand is divided into 71 changwad, which we shall translate as "provinces". Each of these is under an official whose title we shall translate as "commissioner". In each province are a varying number of amphur, or districts, each under a Nai Amphur, or "district officer". In each district are many tambol, or "communes", each under a kamnan, or "commune chief". In each commune are many mu-ban, or "hamlets", each under a puyai-ban, or "headman". The hamlet is the lowest administrative unit.

APPENDIX B

SCHEDULES USED IN THIS STUDY

125 I. Schedule 2.

RICE PRODUCTION COSTS AND INCOME, B.E. 1948, BY HOUSEHOLDS

10. GENERAL

101. Mu Ban House No. 102. Name

103. Date 104. Informants

OUTGO

RAI WORKED

11. By separate parcels:

111. Size 112. Rai

113. Location 114. Distance from home

115. Direction

12. By rice variety:

121. Variety 122. Rai

123. Parcel No. 124. Expected harvest date

13. Rai owned:

131. Owned free 132. Mortgaged and terms

14. Rai owned, not worked, not rented out:

141. Rai 142. Description

143. Location 144. Disposition

125 15. Rai used not producing rice:

151. Rai for house
152. Rai for garden
153. Other
154. Note tenure if not owned

16. Rai rented in:

161. Rai
162. Parcel No. (111)
163. From
164. Rate

MATERIALS CONSUMED

20. Seed:

201. Variety No. (121)
202. Amount
203. Source
204. Price or value

21. Fertilizer:

211. Kind
212. Amount
213. Source
214. Price of value

22. Other (oil, salt; etc.):

221. Kind
222. Amount
223. Source
224. Price of value

LABOR UTILIZED

30. Family workers:

301. Name (sex, age)
302. Relationship

31. Workers hired by year:

311. Name, sex, age
312. Origin
313. Agreement

32. Piece work:

Process	workers, origins	Quantity	Rate	Total cost
321. Preparation	3211	3212	3213	3214
322. Uprooting	3221	3222	3223	3224
323. Transplanting	3231	3232	3233	3234

125

324. Harvesting	3241	3242	3243	3244
325. Other	3251	3252	3253	3254

CAPITAL GOODS USED:

40. Buffalo owned:

401. Workable
402. Young
4011. Names
4012. Value
4013. Life
4014. Residual value (meat, hide, other)

41. Buffalo rented in:

411. No.
412. Value
413. Owner
414. Dates
415. Rate

42. Buffalo costs:

421. Food
422. Labor
423. Medicine (for what)
424. Other

43. Buffalo outfit-yoke:

431. No.
432. Life
433. Cost, each

44. Buffalo outfit-yoke rope:

441. Material
442. Meters per year
443. Cost

45. Buffalo outfit-other rope:

451. Lead rope material
452. Meters per year
453. Cost
455. Nose rope material
456. Meters per year
457. Cost

46. Harrows:

461. No.
462. Material
463. Life
464. Cost, each

125 47. Plows:

471. No.
472. Types
473. Cost, each

	Parts	Material	Life	Cost
474.	Share	4781	4782	4783
475.	mold board			
476.	Handle			
477.	Hitch			

48. Sickles:

481. No.
482. Life
483. Cost
484. Times whetted
485. Cost

49. Weeding knife:

491. No.
492. Life
493. Cost

50. Hoes:

501. No.
502. Life
503. Cost

51. Shovel:

511. No.
512. Life
513. Cost

52. Winnowing Machine:

521. No.
522. Life
523. Cost
524. Upkeep

53. Other tools: (water wheel: threshing pole: rake: etc.)

531. Kind
532. No.
533. Life
534. Cost

125 54. Boats:

541. Type
542. No.
543. Life
544. Cost
545. Upkeep
546. Residual value

55. Windmills:

551. No.
552. Cost
553. Upkeep

Parts	Size	
554. Arm	5541	555. Post
556. Pulley, shaft		557. Rope (Chain)
558. Life		559. Cost

56. Noria:

561. Kind
562. No.
563. Life
564. Cost
565. Upkeep

57. Engine:

571. Type
572. Life
573. Cost
574. Upkeep
575. Fuel Type
576. Amount
577. Cost

58. Watch house:

581. Material
582. Life
583. Cost

60. Other water, irrigation costs:

70. Building Material:

701. Use
702. Kind, amount
703. Source
704. Cost
705. Life
706. Repair

125 71. Taxes:

711. Kind   712. When due
713. Cost

72. Other costs:

INCOME

80. Rai rented out:

801. Rai   802. Description
803. Location   804. To
805. Rate   806. Cost

81. Buffalo rented out:

811. No.   812. Value
813. Life   814. To
815. Period   816. Rate

82. Equipment rented out:

821. Kind   822. No., amount
823. To   824. Period
825. Rate

83. Rice sold:

831. Variety   832. Amount
833. Harvest date   834. Sale date
835. To   836. Price
837. Straw sold

84. Rice kept:

841. Variety   842. Amount
843. Harvest date   844. Value

85. Family rice work wages:

851. Name   852. Employer
853. Work, dates   854. Rate

125 856. Net wage

86. Other income:

II. Schedule 2a (Simplified form of Schedule 2)

1. Name
2. Date
3. Rais worked
4. Rais rented in
5. Rais rented out
6. Rais owned
7. Home lot
8. Seed and planting method
9. Family labor used
10. Hired labor used
11. Piece work
12. Buffaloes used
13. Buffaloes owned
14. Buffaloes rented in
15. Buffaloes rented out
16. Ropes; yoke (number, life)
17. Ropes neck
18. Ropes nose
19. Ropes lead
20. Plows
21. Harrow
22. Sickles
23. Knife
24. Hoe
25. Shovel
26. Box bin
27. Mat bin
28. Basket
29. Chinese broom
30. Coconut broom
31. Pitchfork
32. Kata
33. Rake
34. Wood shovel
35. Boat
36. Sampan
37. Chala
38. Kard
39. Windmill
40. Rahad (Noria)
41. Winnowing machine
42. Building
43. Engine

125 III. Schedule 11

ACREAGE AND CROP BY YEAR

Name of operator........................... Date..............

Year	Area devoted to rice	Harvested crop
1949	.... rai	...........tang
1950	.... rai	...........tang
1951	.... rai	...........tang
1952	.... rai	...........tang

IV. Schedule 12

SPECIAL RECEIPTS AND EXPENSES DURING 1948-52

1948

Kind and amount of special receipts........................
....
....
Kind and amount of special expenses........................
....
....

1949

Kind and amount of special receipts........................
....
....
Kind and amount of special expenses........................
....
....

1950

Kind and amount of special receipts........................
....
....
Kind and amount of special expenses........................
....
....

1951

Kind and amount of special receipts........................
....
....
Kind and amount of special expenses........................
....
....

1952

125 Kind and amount of special receipts........................
....
....

V. Schedule 13

ORDINARY HOUSEHOLD EXPENSES, MARCH 1952 - FEBRUARY 1953

Name of operator......................Date.....................

Kind and amount of goods consumed:

Paddy........................tang
Coconut......................fruit
Palm sugar...................can (of twenty litres)
White sugar..................kilograms
Shrimp paste................. "
Onion........................ "
Garlic....................... "
Dried chili.................. "
Salt......................... "
Curry essence................ "
Limes........................baht
Tamarind.....................kilograms
Fish......................... " ; bought.......kilograms
Vegetables................... " (per day)
Fish sauce...................bottles
Fermented fish...............barrels; home made.......barrels
Meat.........................baht
Dried areca.................. "
Betel leaves................. "
Lime.........................kilograms
Native tobacco...............bundles
Tobacco binder...............bundles
Matches......................boxes
Soaps........................soaps
Eggs.........................eggs; sold.......eggs
Medicine.....................baht
Temple contribution..........baht
Contribution to neighbors...baht
Personal expenses............baht
Clothing.....................baht
Children's allowances........baht
Kerosine: for light.....can; for fishing.....can; for irrigation.....can.

125 VI. Schedule 14

FARM AND HOUSEHOLD INVENTORY

Name of operator.......................Date...................

Item	Quantity	Present or replacement value
Land		
Building		
Buffaloes		
Farm implement		
Plow		
Harrow		
Roller		
Sickle		
Weeding knife		
Hoe		
Shovel		
Windmill		
Noria		
Gas engine		
Pitchfork		
Kata		
Rake		
Chinese broom		
Coconut broom		
Basket		
Mat bin		
Box bin		
Winnowing machine		
Wooden spatula		
Others		
Boats		
Sampan		
Mard		
Chala		
Others		
Fishing equipment		
Net		
Trap		
Spear		
Hook		
Pressure lamp		
Others		

125

Item	Quantity	Present or replacement value
Poultry and other livestock		
Chicken		
Duck		
Others		
Kitchen utensils (enumerate)		
Bedding (enumerate)		
Storage (enumerate)		
Furniture (enumerate)		
Miscellaneous (enumerate)		

125 VII. Schedule 15

BRIEF HISTORY OF FARM OPERATOR

Name of operator......................Date...................

Name of spouse.......................

Other members in the family

Name........................Relation..................
Name........................Relation..................
Name........................Relation..................
Name........................Relation..................
Name........................Relation..................
Name........................Relation..................
Name........................Relation..................
Name........................Relation..................

Date of first marriage............
Date of starting an independent family............
If not branching off from old family, date of assumption of familyheadship..................

List kind, quantity, and value of parental gifts when branching off:

Item	Quantity	Value
....	....	.....
....	....	.....
....	....	.....
....	....	.....
....	....	.....
....	....	.....

List kind, quantity, and value of wealth accumulated during nascent period:

Item	Quantity	Value
....	....	.....
....	....	.....
....	....	.....
....	....	.....
....	....	.....

Describe past incidents of significance which had occurred to you:

125 VIII. Schedule 16

BRIEF HISTORY OF FARM LABORER

Name of laborer.................... Date....................
Age........Education............... Date ordained...........
Date conscripted................... Date married............
Name of father..........of mother........of spouse...........
Names of children.............. ....
....

Work record during past five years:

Year	Employer	Wage
1953	....	....
1952	....	....
1951	....	....
1950	....	....
1949	....	....

Information on condition of parents:

....
....
....
....

Information on the condition of the laborer:

....
....
....
....

125 IX. Schedule 17

CHECK LIST OF ECONOMIC CONDITION OF OPERATOR

Name of operator.................... Date................

Rai worked............Rai owned...........Rai rented in......
Rai rented out........... (all in 1952 rice year only)

Rental rates in 1952: Rate paid.......Rate received.........

Paddy stock on hand at the end of March, 1953........tang

Outstanding debts in December, 1952 (before settlement by money received from the 1952 crop):
Long term loans: Amount.......baht Rate of interest.....
Amount.......baht Rate of interest.....
Amount.......baht Rate of interest.....

Credit purchase account: Total......baht Principal,,....

Has credit purchase account of 1951 been fully paid at the harvesting season of that year? (Check) Yes.... No....

Amount of credit purchase account that was carried over from last year..........baht. Of this how much was the principal, or the amount agreed upon at the harvesting season of last year?.............baht.

The operator's comment on general debt situation:

....
....
....
....
....

The operator's comment on debt situation of the people he knows:

....
....
....
....
....

125 X. Schedule 18.

DAILY WORK RECORD OF CHOM FARM STAFFS

Date____________

Hour	Kind of Farm Work				
	Worker A	Worker B	Worker C	Worker D	Worker..
0:00- 0:30					
0:30- 1:00					
1:00- 1:30					
1:30- 2:00					
2:00- 2:30					
2:30- 3:00					
3:00- 3:30					
3:30- 4:00					
4:00- 4:30					
4:30- 5:00					
5:00- 5:30					
5:30- 6:00					
6:00- 6:30					
6:30- 7:00					
7:00- 7:30					
7:30- 8:00					
8:00- 8:30					
8:30- 9:00					
9:00- 9:30					
9:30-10:00					
10:00-10:30					
10:30-11:00					
11:00-11:30					
11:30-12:00					

125

Hour	Kind of Farm Work				
	Worker A	Worker B	Worker C	Worker D	Worker..
12:00-12:30					
12:30-13:00					
13:00-13:30					
13:30-14:00					
14:00-14:30					
14:30-15:00					
15:00-15:30					
15:30-16:00					
16:00-16:30					
16:30-17:00					
17:00-17:30					
17:30-18:00					
18:00-18:30					
18:30-19:00					
19:00-19:30					
19:30-20:00					
20:00-20:30					
20:30-21:00					
21:00-21:30					
21:30-22:00					
22:00-22:30					
22:30-23:00					
23:00-23:30					
23:30-24:00					

APPENDIX C

REGISTERED RICE MILLS IN THAILAND

256 I. Number of registered rice mills in Thailand by changwad.

Changwad*	Number	Changwad*	Number
Angthong (C)	16	Patalung (S)	14
Ayuthia (C)	61	Pattani (S)	2
Bangkok (C)	49	Patumtani (C)	29
Buriram (NE)	5	Pichit (C)	26
Chacherngsao (C)	42	Prachuab (C)	4
Chainat (C)	4	Petchabun (C)	8
Chaipum (NE)	2	Petchaburi (C)	12
Chantaburi (C)	15	Pisnulok (C)	6
Chiengmai (N)	28	Prae (N)	6
Chiengrai (N)	12	Puket (S)	6
Cholburi (C)	25	Rajburi (C)	38
Chumporn (S)	9	Rayong (C)	9
Dhonburi (C)	45	Roi-ed (NE)	2
Kambaengpet (C)	5	Sakonnakorn (NE)	1
Kanburi (C)	3	Saraburi (C)	23
Khonkaen (NE)	12	Satul (S)	1
Krabi (S)	1	Singburi (C)	6
Lampang (N)	14	Smudprakarn (C)	26
Lampoon (N)	1	Smudsakorn (C)	14
Lopburi (C)	19	Smudsongkram (C)	11
Maehongsorn (N)	1	Songkla (S)	7
Mahasarakam (NE)	1	Srisaked (NE)	3
Nakornnayok (C)	16	Sukhotai (C)	6
Nakornpanom (NE)	4	Supanburi (C)	40
Nakornpatom (C)	38	Surin (NE)	6
Nakornsawan (C)	29	Tag (C)	4
Nakornsritamraj (S)	21	Trad (C)	3
Nonburi (C)	15	Trang (S)	1
Nongkai (NE)	2	Ubonrajtani (NE)	14
Pang-nga (S)	3	Udorntani (NE)	10
		Utaitani (C)	10
		Uttradit (C)	6

---

* Abbreviation immediately following each changwad indicates the geographical region: C, Central; N, North; NE, Northeast; S, South.

256 II. Number of registered rice mills in Thailand by region.

Region	Number
Central	663
North	62
Northeast	62
South	64
Total	851

III. Bangkok rice mills and their capacities (only those in operation)

Name of mill	Capacity tons/24 hrs.
Thai Rice Mill, 1	500
Thai Rice Mill, 2	350
Kwang Heng Lee	300
Kwang Hong Lee	250
Kiang Lee	230
Tai Sae	230
Chin Heng Lee	210
Nguan Hong Lee	200
Nguan Chiang Lee	185
Kwang Sun Thai	180
Chin Seng Lee	176
Long Heng Lee	165
Thai Rice Mill, 10	160
Chiang Seng Huad	160
Long Heng	160
Kwang Heng Thai	150
Kwang Sun Lee	150
Liang Huad Lee	130
Yong Chiang Thai	130
Thai Rice Mill, 7	110
Long Seng	90
Lee Heng	88
Hua Heng	84
Yu Heng Lee	80
Thai Rice Mill, 8	65
Chiang Seng Hong	60

Source: Economic Yearbook, 1954

APPENDIX D

LIST OF FRUIT GROWN IN BANGCHAN

Thai name	English name	Season
Chompu	Rose apple	Mar. - April
Farang	Guava	Aug. - Sept.
Khanun	Jack fruit	Nov. - May
Kluay	Banana	all year round
Kraton	Santol	Oct. - Dec.
Lamud	Chico	Nov. - April
Mafai	Rambeh	Mar. - April
Makharm	Tamarind	May -- Jan.
Makharm-pom	. . .	Nov. - Feb.
Makharm-ted	Manila tamarind	Dec. - Feb.
Makorg	Hog plum	Jun. - Sept.
Makrood	Kaffir lime	July - Oct.
Malakor	Papaya	all year round
Mamuang	Mango	April- June
Manao	Lime	July - Nov.
Maprao	Coconut	all year round
Maprang	Marian plum	Feb. - Mar.
Mapud	. . .	Mar. - Jun.
Matum	Bael fruit	July - Oct.
Ma-ug	. . .	all year round
Mawaeng	Sparrow's brinjal	July - Oct.
Mayom	Star gooseberry	Dec. - May
Noina	Custard apple	Nov. - Dec.
Phudsa	Jujube	Dec. - Jan.
Sapparod	Pineapple	May - Jun.
Som-khiewwan	Tangerine	Nov. - Dec.
Som-o	Pummelo	Sept.- Jan.
Som-sa	Sour orange	all year round
Tabtim	Pomegranate	all year round
Wa	Java plum	April
Yor	Morinda	all year round

(. . .) Not available.

APPENDIX E

LIST OF VEGETABLES GROWN IN BANGCHAN

Thai name	English name	Season
Bawn	. . .	all year
Bua	Lotus	July - Dec.
Bua-bog	. . .	all year
Buab	Sponge gourd	Sept.- Dec.
Buab-liam	Towel gourd	May - Sept.
Chaploo*	Wild betel	all year
Faeng	Little gourd	Sept.- July
Fagthong	Pumpkin	Mar. - June
Horapa	Sweet basil	all year
Kaprao	Holy basil	all year
Khamin	Turmeric	all year
Khar	Galanga root	" "
Khileg	. . .	" "
Khing	Ginger root	" "
Krachai	. . .	" "
Makhua	Eggplant	" "
Man-musua	Yam	Oct. - Dec.
Man-samparang	Gassava	Mar. - April
Man-samrong	Bitter cassava	Mar. - April
Namtao	Bottle gourd	Aug. - Sept.
Oy	Sugar cane	Nov. - Mar.
Pag-bia*	Purslane	all year
Pag-bung*	Morning glory	" "
Pag-chee	Parsley	" "
Pag-kached	. . .	" "
Pag-khom*	Amaranth	Dec. - May
Pag-pangpuay*	Primrose willow	May - June
Pag-waen	Marsilea	July - Oct.
Prig-khinu	Bird pepper	all year
Sadao	. . .	Dec. - Feb.
Sano	. . .	Oct. - Dec.
Saranae	Peppermint	all year
Takrai	Lemon grass	" "
Tamlung	. . .	" "
Thonglang	. . .	Feb. - Mar.
Thua-fagyao	String bean	all year
Yod-khae	Kauri	April - May

(. . .) Not available.

* These plants grow wild in Bangchan.

226

APPENDIX F

LIST OF FISH AVAILABLE IN BANGCHAN

Thai name	English name	Season
Hoy karb	. . .	July - Sept.
Koy khong	. . .	all year
Kung	Prawn	July - Sept.
Kung foy	Shrimp	January
Pla boo	Goby	July - Dec.
Pla chado	. . .	all year
Pla chalad	. . .	" "
Pla chon	Serpentheadfish	" "
Pla dug	Silurid	" "
Pla jeed	Catfish	July - Feb.
Pla juad	. . .	July - Oct.
Pla kad	Fightingfish	July - Sept.
Pla kating	. . .	July - Oct.
Pla katunghew	. . .	July - Feb.
Pla khayaeng	. . .	July - Dec.
Pla khem	Needlefish	July - Feb.
Pla kod	. . .	July - Dec.
Pla kradi	Gourami	all year
Pla krai	Featherbackfish	July - Dec.
Pla krasong	. . .	all year
Pla krim	. . .	July - Dec.
Pla lai	Eel	all year
Pla lod	. . .	" "
Pla mor	Climbingfish	" "
Pla nua-on	Sheatfish	July - Dec.
Pla paeb	Minnow	July - Dec.
Pla salid	Pilotfish	all year
Pla siw	Carp	July - Dec.
Pla soy	. . .	July - Oct.
Pla tapian	Dace	July - Dec.
Taparb-nam	. . .	all year

(. . .) Not available.

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128

[For the author's discussion of his methods of processing data, ratings, scoring and sampling techniques, *passim*, see category 116, pp. 52, 53, 94, 127-156, 170-199, 215-221, 240-243, 271-311, and 364-391.]

125

[Information on sampling techniques, methods of scoring, and the usage of control groups have been filed also in the category 128.]

243

[For agricultural data, passim, see category 116, pp. 1-4, 31-38, 45-48, 92-148, 166-319, and 336-393.]